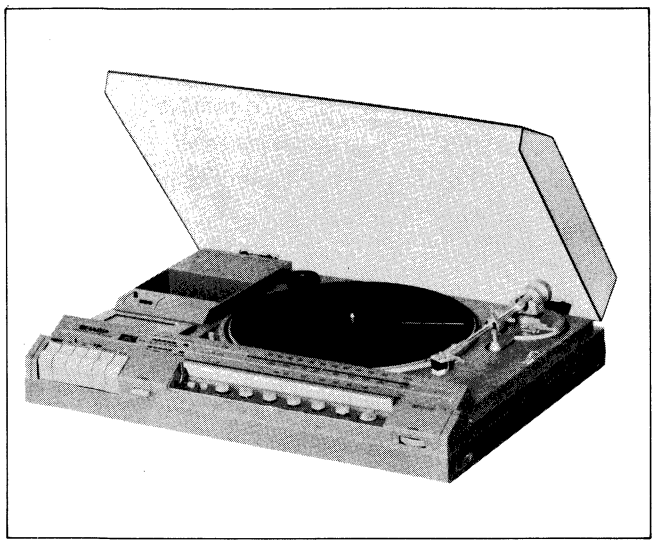
SHARP SERVICE MANUAL

SG-270H
SG-270E

ATSM880095MCT



DOLBY SYSTEM ®

Noise reduction system manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

MODEL
SG-270H
SG-270E (for UK)
SG-270E (for SCA)

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified by used.

SPECIFICATIONS

Power source:	AC 110/220/240V, 50/60 Hz
Power consumption:	150 W
Semi-conductors:	12 ICs (Integrated circuits) 1 FET 17 Transistors 13 Diodes 13 LEDs
Dimensions:	Width; 540 mm Height; 138 mm Depth; 397 mm
Weight:	7.7 kg

AUDIO SECTION

Music power output:	2 x 32 W/4 ohm at 5% T.H.D.
Continuous power output:	2 x 20 W/4 ohm at 5% T.H.D., both channel driven
Frequency response:	50 Hz to 35 kHz (–3dB)
Tone control:	Bass; ±10 dB at 100 Hz Treble; ±10 dB at 10 kHz
Input sensitivity and input impedance:	MIC; 1 mV, 10k ohm
Output impedance:	Speakers; 4 ohm Headphones; 8 ohm
Channel separation:	40 dB (1 kHz)

FM SECTION

Frequency coverage:	87.6 to 108 MHz
Sensitivity:	2.5μV (at S/N 26 dB, 40 kHz deviation)
Harmonic distortion:	0.5% (mono)
Stereo separation:	36 dB (1 kHz)
S/N ratio	60 dB (40 kHz deviation)

AM SECTION

Frequency coverage:	MW; 520 to 1620 kHz LW; 150 to 285 kHz
Usable sensitivity:	MW; 316μV/m LW; 316μV/m

TAPE DECK SECTION

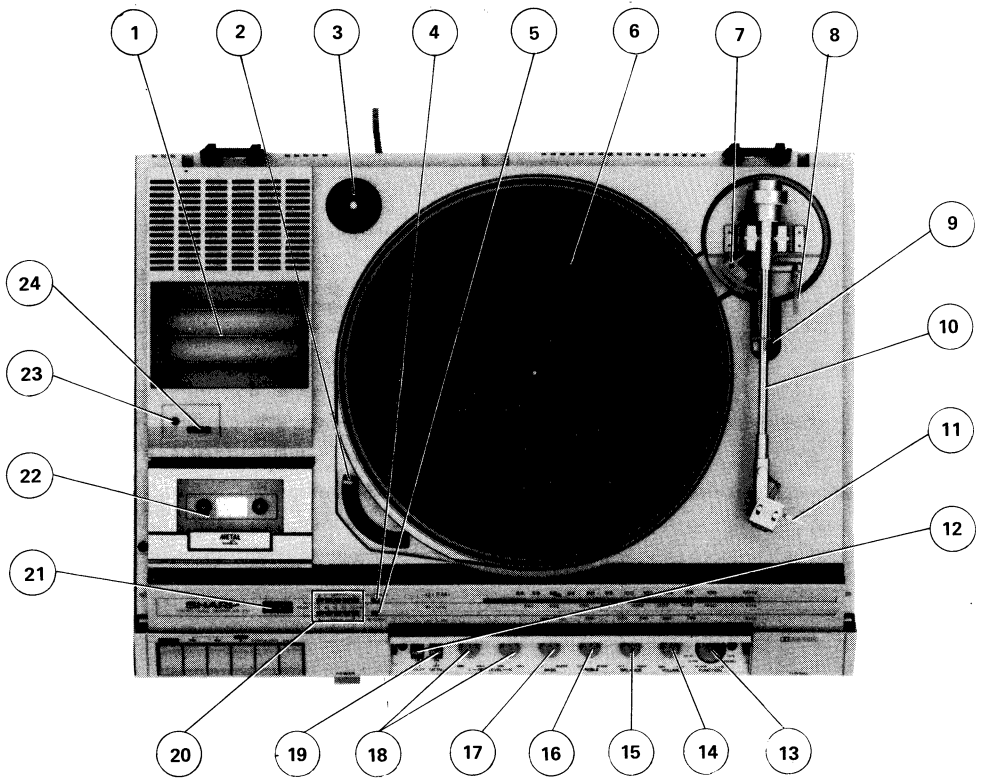
Type:	4-track, 2-channels stereo cassette deck
Tape suitable:	Philips standard compact cassette
Bias and erase system:	AC 85 kHz
Tape speed:	4.8 cm/sec.
Wow and flutter:	0.2% (DIN)
Frequency response:	Metal tape; 40 Hz to 15000 Hz Normal tape; 40 Hz to 14000 Hz
S/N ratio:	Metal tape; 62 dB (Dolby N.R. on, at over 5 kHz) 52 dB (Dolby N.R. off)

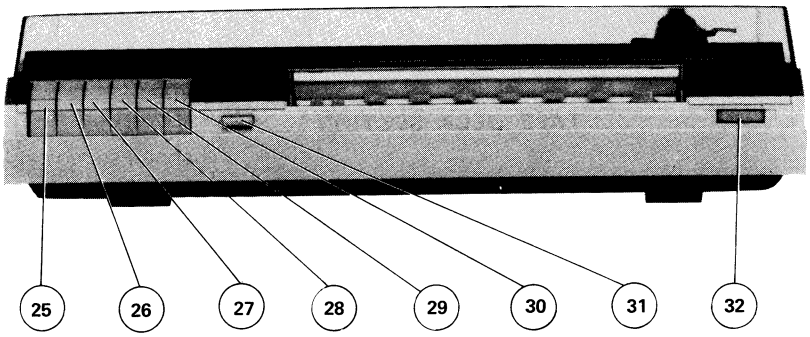
RECORD PLAYER SECTION

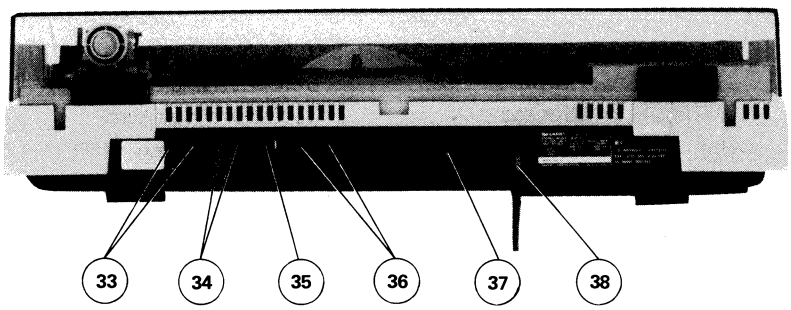
Type:	Belt drive single player
Speeds:	33-1/3 and 45 r.p.m.
Turntable size:	28 cm
Tonearm:	Static-balanced tube tonearm
Cartridge:	Magnetic type

SHARP CORPORATION OSAKA, JAPAN

LAYOUT OF PARTS



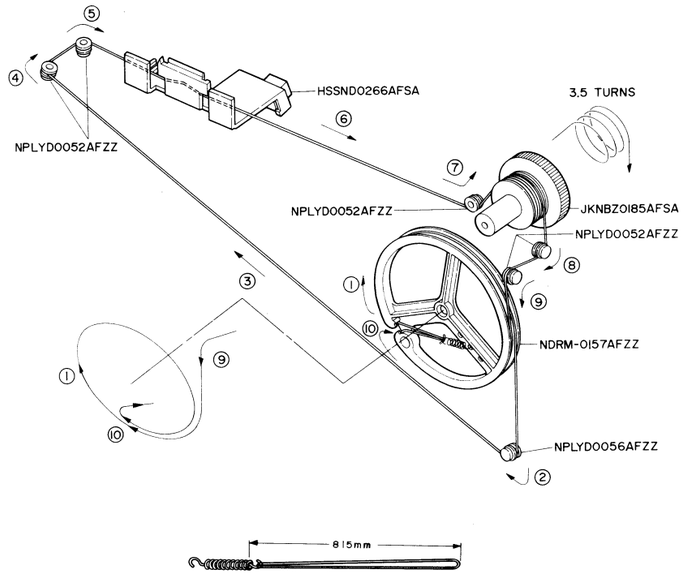


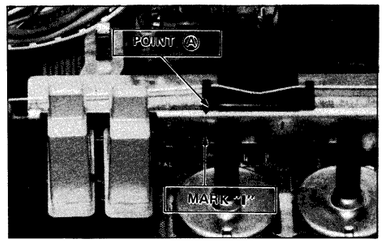


1. Cassette Storage
2. Speed Selector
3. Spindle Adaptor for 45 rpm-Records
4. FM Stereo Indicator
5. Recording Indicator
6. Turntable Platter
7. Tonearm Lift-arm
8. Cueing/Pause Control Lever
9. Tonearm Rest
10. Tonearm
11. Head-Shell Grip
12. Dolby NR Switch
13. Function Selector
14. Volume Control
15. Balance Control
16. Treble Control
17. Bass Control
18. Record Level Controls
19. Metal Tape Switch
20. Record/Playback Level meter
21. APSS Indicator
22. Cassette Compartment
23. Tape Counter Reset Button
24. Digital Tape Counter
25. Record Key
26. Fast Forward/Forward APSS Key
27. Rewind/Reverse APSS Key
28. Playback Key
29. Stop/Eject Key
30. Pause Key
31. Power Switch
32. Tuning Control
33. MW/LW External Aerial Leads
34. FM External Aerial Jacks
35. Beat Canceller Switch
36. Speaker Output Sockets
37. Mains Voltage Selector
38. AC Supply Cord

Figure 2

DIAL CORD STRINGING





Dial Pointer Setting:

This model SG-270H/E requires a new method in its dial pointer setting, more or less different from thyother models. Once we used to determine the position of the dial pointer with reference to the dial scale graduation on it, but now in doing this we must follow the frequency instruction which is indicated on the top cabinet of the SG-270H/E.

There are marks "**I**" (three), "X" (three), "O" (three) and "**I**" (one) on the dial bracket, all indicative of the frequencies to be applied to the set, each different from the other according to these marks. The mark "**I**" is useful for the dial pointer setting.

1. Turn the tuning control knob fully clockwise (to the lowest frequency position).
2. Slide the dial pointer until its point A will align with the mark "**I**" on the dial bracket.

Figure 3-1

VOLTAGE SELECTION

The unit is designed to operate from 110 V, 220 V or 240 V AC mains.

Check the AC voltage level setting at rear of unit before plugging in supply cord. If necessary, adjust selector to correspond to the AC supply voltage of your area.

If the AC supply cord is already plugged into an AC supply outlet, unplug it before checking the voltage.

Selector adjustment:

The voltage selector is on the rear of the unit. Turn the selector with a screwdriver in either direction until the correct voltage can be read in thw window next to the adjustment screw.

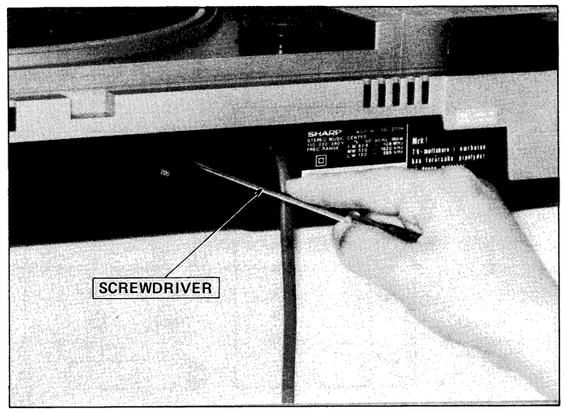


Figure 3-2

DISASSEMBLY

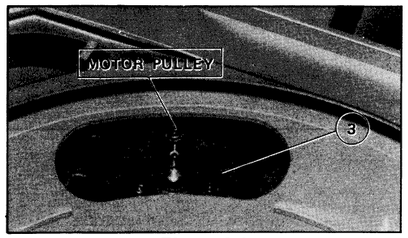


Figure 4-1

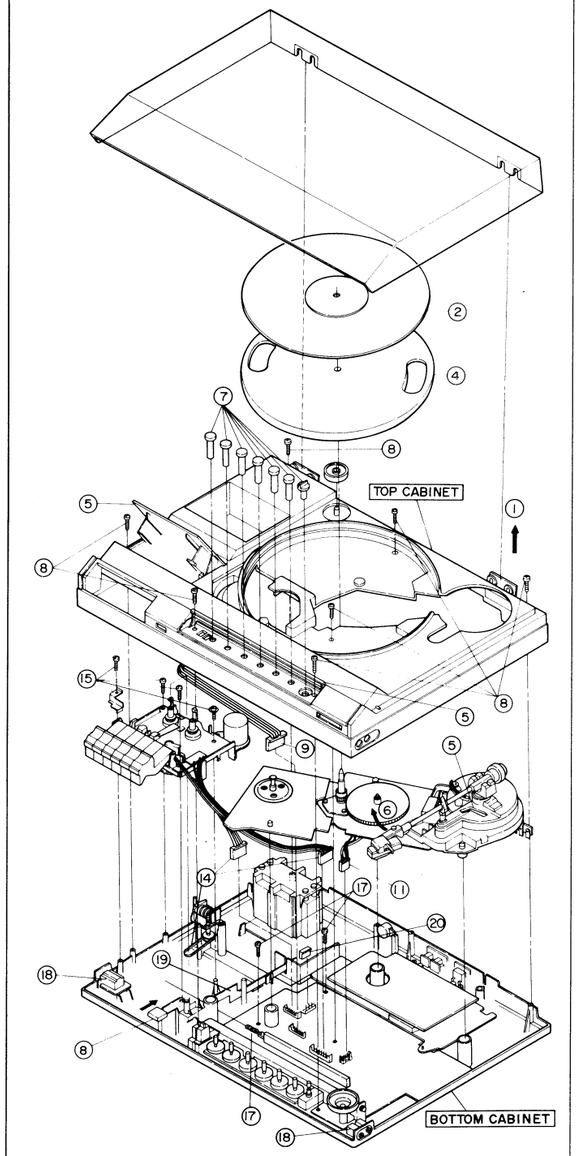


Figure 4

Caution:

Prior to disassembling the set, be sure to unplug the AC supply cord from a wall outlet and remove all of connection leads found in the back of the set.

DUST COVER REMOVAL

(1) Lift the dust cover up by holding its right and left sides with your hands.

TOP CABINET REMOVAL

(2) Remove the turntable mat from the center spindle.
(3) Detach the turntable belt from the motor pulley.
(4) Remove the turntable platter from the center spindle.
(5) Open the cassette compartment door and controls door, and raise the cue-up lever manually.
(6) Shift the tonearm fully towards the center spindle.
(7) Take all the knobs out of the cabinet: record level control, treble control, balance control, volume control, bass control and function selector.
(8) Remove the 7 screws from the top cabinet.
Now it is allowed to separate the top cabinet from the bottom cabinet. Lift the top cabinet up carefully not to allow it to hit the tuning control knob, tonearm and Power Switch.
(9) Disconnect the socket (CNS4) from the main PWB.

PLAYER UNIT REMOVAL

(10) This removal is allowed only after "TOP CABINET REMOVAL".
(11) Disconnect the socket (CNS1) from the main PWB.
(12) Turn the top cabinet over, then remove the player unit by holding it up slowly.

MECHANISM UNIT REMOVAL

(13) This removal is allowed only after "TOP CABINET REMOVAL".
(14) Disconnect the sockets (CNS2, CNS3) from the main PWB and remove the tape counter belt from the tape counter.
(15) Remove the 4 screws from the bottom cabinet.

MAIN PWB REMOVAL

(16) This removal is allowed only after "TOP CABINET REMOVAL", "PLAYER UNIT REMOVAL" and "MECHANISM UNIT REMOVAL".
(17) Remove the record/playback spring from the record/playback switch and remove the 2 screws from the bottom cabinet.
(18) Disconnect the microphone jacks and headphones jack from the bottom cabinet.
(19) Lift up the power switch lever from the bottom cabinet.
(20) Disconnect the socket (CNS5) from the main PWB.

HEAD CLEANING

Clean the heads often to remove dust and tape residue. Foreign material on the heads impairs the sound quality of both recording and playback.

There are two ways of cleaning heads:

A. The simplest method is to use a head cleaning cassette available at most audio stores. Follow the instructions supplied with the cleaning cassette.

B. The heads can be cleaned manually.
   1. Place power switch to off position.
   2. Depress the stop/eject key in order to open the cassette compartment. Remove the cassette tape if present.
   3. Depress the playback key.
   4. Wipe the heads with a soft cloth that has been partially soaked in methylated spirits (alcohol) until the heads are cleared of all contamination.

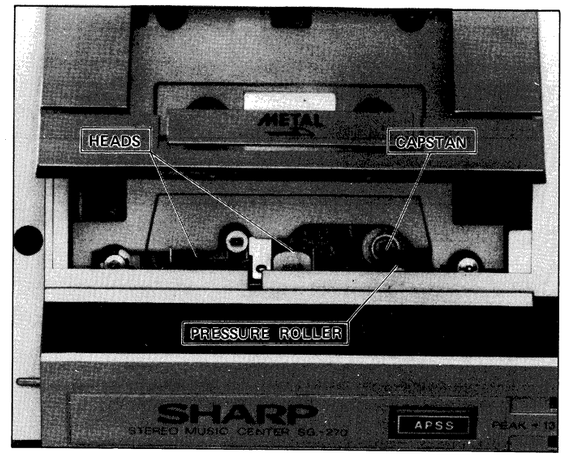


Figure 5-1

STYLUS CLEANING

To remove lint or dust from the stylus follow the procedure illustrated. A soft brush (not supplied) may be used. Never use a finger or other object which could damage the stylus.

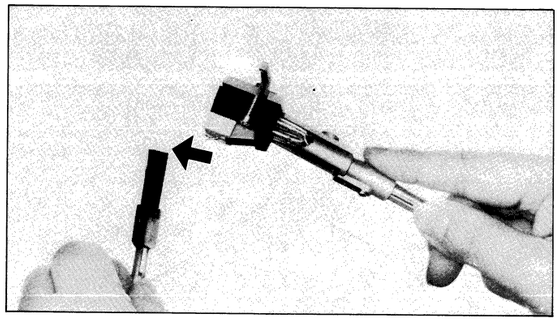


Figure 5-2

STYLUS REPLACEMENT

Sound distortion and record damage result when worn out stylus is used. The cartridge stylus supplied has a life of about 500 hours.

Good sound reproduction requires a stylus change, (for a new one,) about every 500 hours.

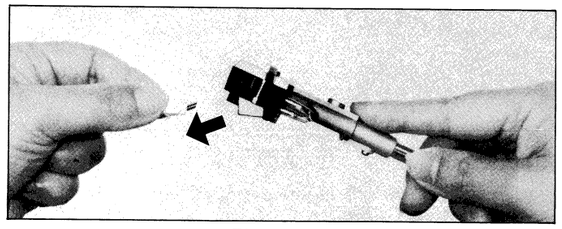


Figure 5-3

How to replace:

1. Switch off the power.
2. Remove the worn out stylus assembly from body of cartridge.
3. Gently slide a new stylus assembly into the body of cartridge.

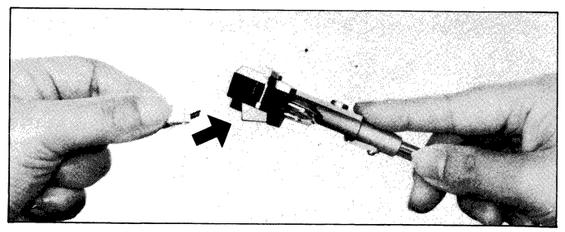


Figure-4

BLOCK DIAGRAM

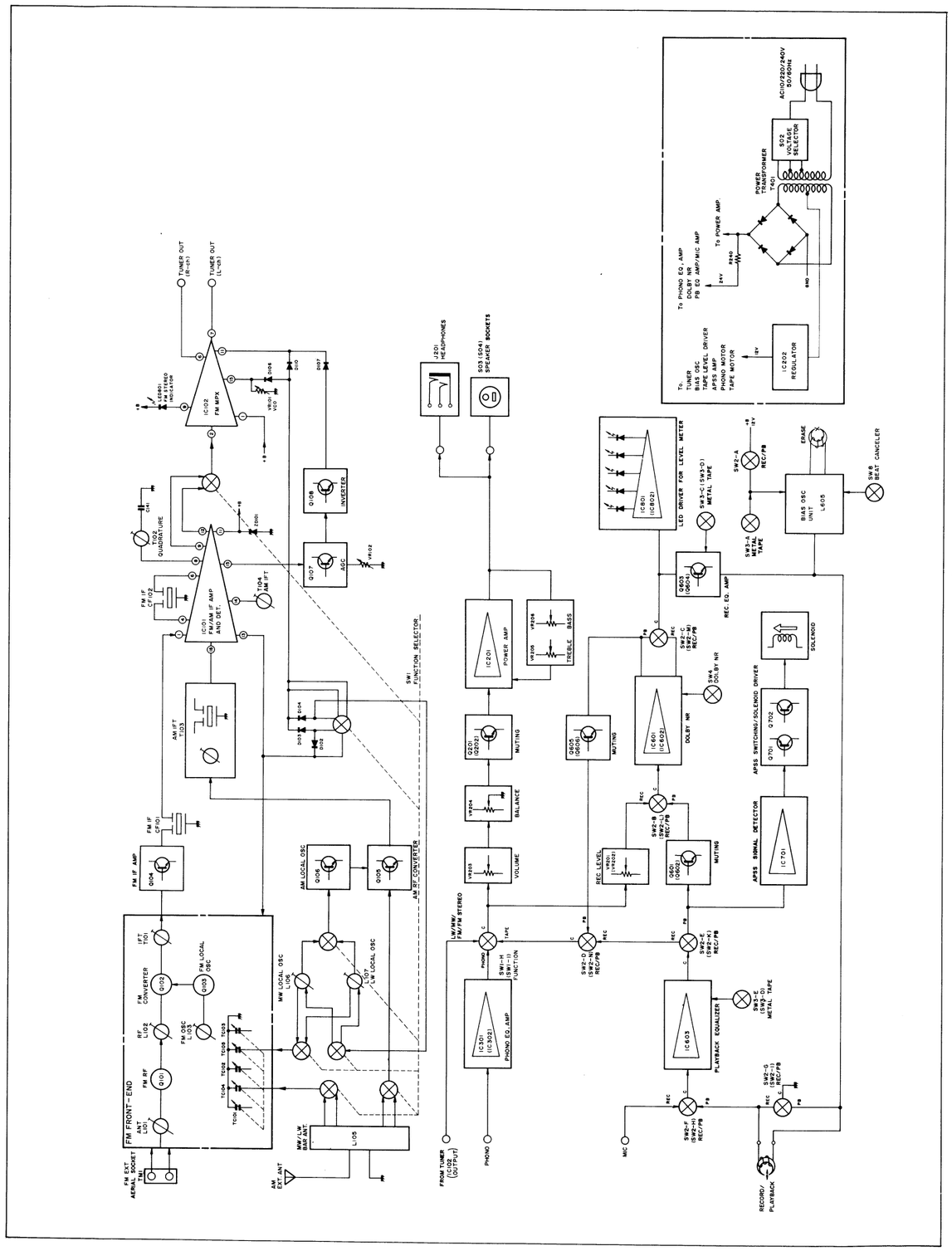


Figure 6

CIRCUIT DESCRIPTION

FM RF CIRCUIT

This FM RF circuit is composed of one FET (Q101) and two transistors (Q102 and Q103): the FET (Field Effect Transistor) is much better than the ordinary transistor in reducing an intermodulation characteristic and a spurious characteristic.
The Q101 operates as an FM RF amplifier and so does the Q102 as an FM converter. And the Q103 is an FM local oscillator which feeds an oscillation voltage to the base of Q102 through the capacitor (C114). In the Q102, the oscillation frequency from the Q103 is mixed with the broadcast frequency from the Q101 to produce an IF signal of 10.7 MHz: the transformer (T101) is to tune in this frequency 10.7 MHz.

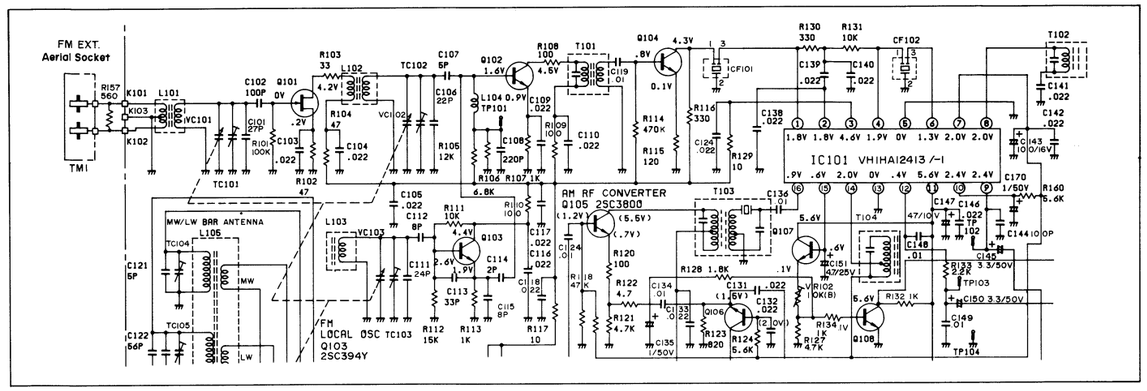


Figure 7-1

FM IF CIRCUIT

The FM IF circuit receives IF signal of 10.7 MHz from the previous FM RF circuit, and here the signal is amplified by the transistor (Q104) and it enters the ceramic filter (CF101) which is characteristic of distortion-free amplification and high selectivity. The amplified IF signal then arrives at pin (1) of the integrated circuit (IC101), and here the signal gain is boosted by the five-stage differential amplifier of IC101 and the signal appears at pin (4) to reach the next ceramic filter (CF102) whose characteristic is the same as the said CF101. Again the signal gain is boosted at pin (6) of the IC101 to provide enough limiter operation.

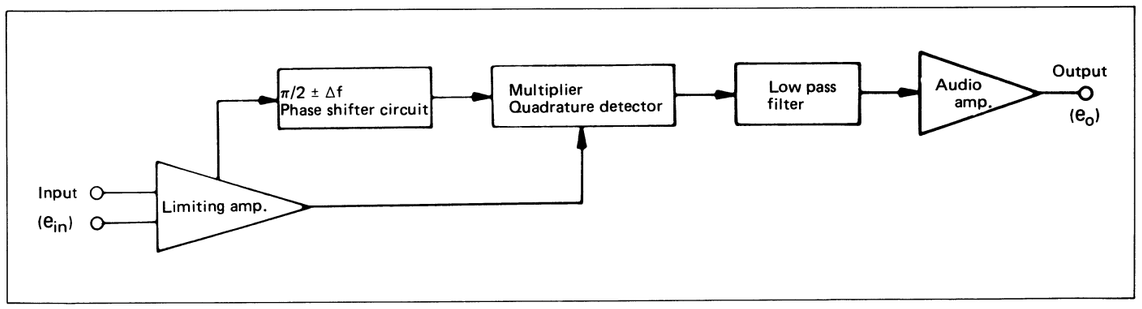


Figure 7-2

FM DETECTOR CIRCUIT

Thanks to newly developed ICs, this set employs so called "Quadrature Detector" replacing the conventional ratio detector and Foster-Seeley's detector: the basic configuration of it is as shown in Figure 7-2.
The multiplier quadrature detector circuit used here is to receive two different input signals at once — one of the two has been subject to a phase shift (of about $\pi/2$) with respect to the other, thereby to produce a demodulated signal. (The term "quadrature" comes from the fact of the two signals having a phase difference of $\pi/2$ between them). The multiplier is a doubly balanced circuit shown in the circuitry drawing; Figure 8-2 reveals how the phase shift circuit offeres the required characteristic.
The quadrature detector circuit is featured by:
(1) Good linearity and low distortion,
(2) Operates on small signal and higher harmonics,
(3) Wide-band detector of as much as 1.5 MHz.
This circuit thus assures lowered distortion even with the overmodulation of more than 100%, thereby to make high quality sound reproduced.
Phase shift capacitor is inside of the integrated circuit (IC101) and the coil (T102) is a 10.7 MHz Tuning quadrature coil. The detected output appears at pin (9) and it passes through the function selector switch and reaches pin (2) of the Integrated Circuit (IC102).

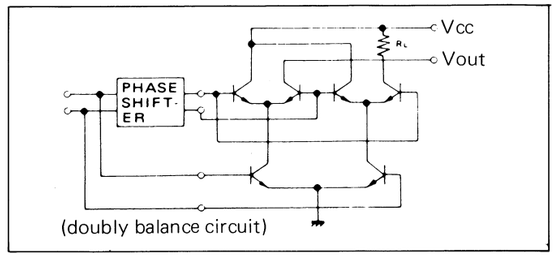


Figure 8-1

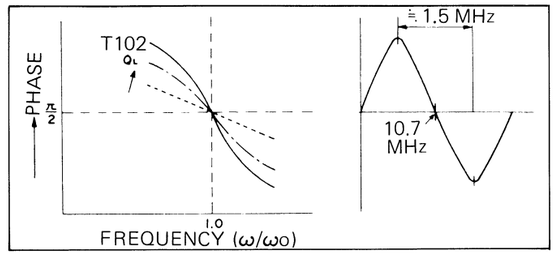


Figure 8-2

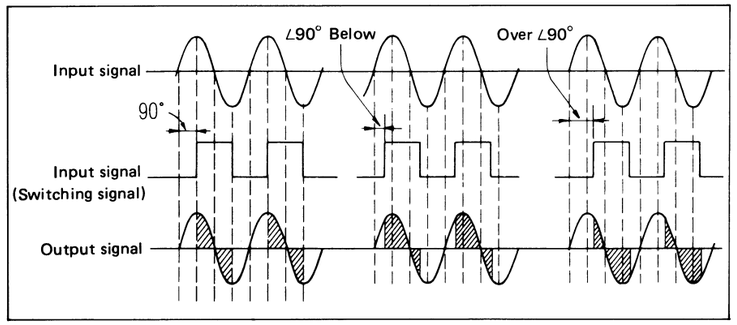


Figure 8-3

PLL STEREO DEMODULATOR CIRCUIT

● Characteristics of PLL Stereo Demodulator Circuit

Demdoulation of the stereo composite signals needs to take a 19 kHz pilot signal out of them and to convert it into a 38 kHz signal.
Most conventional methods to create such a 38 kHz signal are what we name a multiple system which works with a nonlinear performance of the elements involved in it. This system has usually two to three coils, and if even one of them dislocates from its initially adjusted point (primarily due to a secular change) the separation effects will get deteriorated.
Moreover it has such a contradition that the more its efficiency of the coils is increased enough to withstand the outer pulse signals (like automobile ignition noises) the more the coils suffere secular changes.
However, the recently developed IC-ed demodulator overcomes these difficulties to provide much sufficient separation effects indeed. That is, the demodulator system here which includes a P.L.L. (Phase Locked Loop) is developed after studying and mastering the difficulties we above mentioned. The PLL system stereo demodulator shows such three merits as:

1. Both the pilot signal and 38 kHz signal are automatically made the same in their phase to minimize the deterioration of separation effect due to the phase deviation to the degree considerable enough.
2. Only one of the variable resistor newly employed can cover the role of two to three pieces of the conventional coils, so troubles of the parts due to secular changes have a less and less chance to occur. More, even if this variable resistor is slightly dislocated, the separation effect will never worsen aided by the merit as mentioned in 1 by which the automatic phase adjustment is assured.
3. Compared with the conventional one, the PLL system demodulator gives a more noise withstanding performance since it is characteristic of its selectivity of the incoming frequencies and its contimity of oscillation frequencies (short-time memory), thus making the stereo modulation enough stabled.

- **Behavior of the PLL stereo demodulator circuit**

The integrated circuit (IC102) by itself is to form a P.L.L. stereo demodulator circuit and its block diagram is given in Figure 9-1 and 29. The semi-variable resistor (VR101) is useful to adjust the V.C.O. frequency to 76 kHz – its adjustment can be monitored at the test point TP105. In AM reception mode, however, the diode (D106) and resistor (R140) operate in such a way as to apply +B voltage to the circuit, thereby to stop the oscillation of V.C.O. frequency.

When the function selector switch (SW1) is set at "FM" position, +B voltage is induced to enter pin 11 of the integrated circuit (IC102) via the resistor (R143) and diode (D107), so the set is forced into the monophonic reception mode: at that time, the signal appearing at the emitter of transistor (Q107) is applied to the transistor (Q107) the output voltage of which should be the same as the +B voltage.

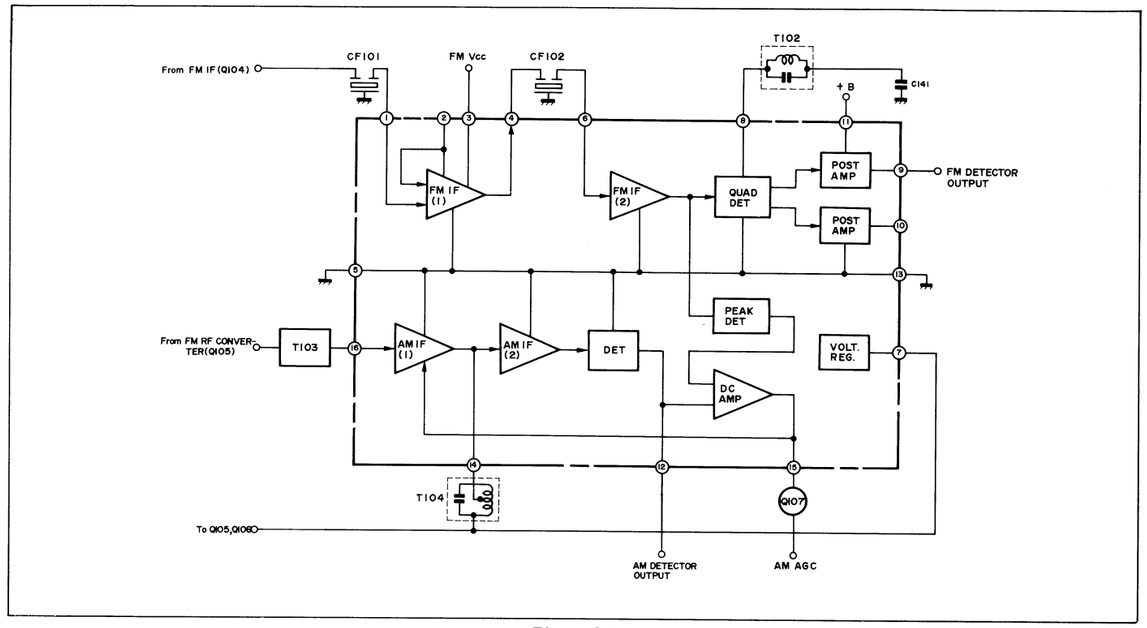


Figure 9-1

AM CIRCUIT

The MW/LW bar antenna coil (L105) is just like an antenna tuning circuit, and MW and/or LW broadcast signal reaching here is delivered to the transistor (Q105) which is to work as an RF amplifier as well as an RF converter: the coils L106 and L107 around here are provided to help MW local oscillation and LW local oscillation, respectively. The converter transforms the incoming AM signal into IF signal (455 or 468 kHz), and this IF signal then arrives, via the ceramic filter (IF frequency selective element) of IF transformer (T103), at pin ⑯ of the integrated circuit (IC101) where it is amplified for the first time. The IF signal now appears at pin ⑭ and enters the IF transformer (T104) where it is again amplified enough to be processed by the next detected circuit. The detected output finally appears at pin ⑫ of the integrated circuit (IC101).

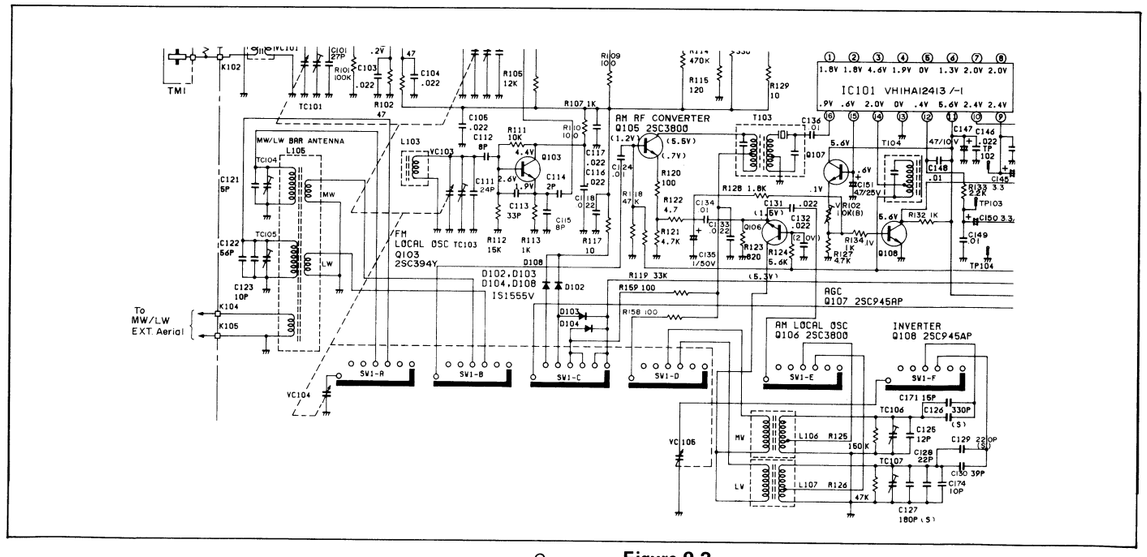


Figure 9-2

APSS SIGNAL DETECTOR CIRCUIT

- **Limiter Amplifier**

APSS signal which has been once amplified by the playback equalizer amplifier (IC603) is again amplified by this limiter amplifier and here it is limited to the specified level whatever size it has had when coming here. And the limited signal enters via the capacitor (C704) into pin ⑥ of IC701, then it is applied to the detector/rectifier circuit where it is rectified to feed DC voltage to the capacitor (C705). This capacitor and the resistor (R703) form together a time constant circuit by which there occurs no APSS operation when the tape reaches its program-to-program gap (3-second non-signal recorded section).

The level comparator circuit is to receive the APSS signal from the previous detector/rectifier circuit, and with its own reference voltage the comparator judges whether the incoming signal belongs to part of the recorded signal or part of the non-recorded signal: the result is pin ⑧ of IC701 becomes "High" level with the recorded part and it becomes "Low" level with the non-recorded part: the reference voltage is made the same as DC voltage caused by the capacitor (C705).

The solenoid control circuit is to receive DC signal from the said pin ⑧ of IC701, and it feeds it to the transistor (Q701) through the capacitor (C708). When pin ⑧ changes from "High" to "Low" level, the capacitor (C708) charges itself with +12V through the resistor (R705), during which time the Q701 turns on and so does the Q702, so that there is a potential difference between both terminals of the solenoid (SOL1) getting the solenoid attracting itself. After the attraction, the fast-forward APSS or reverse APSS mode is cancelled and the set is forced into playback mode.

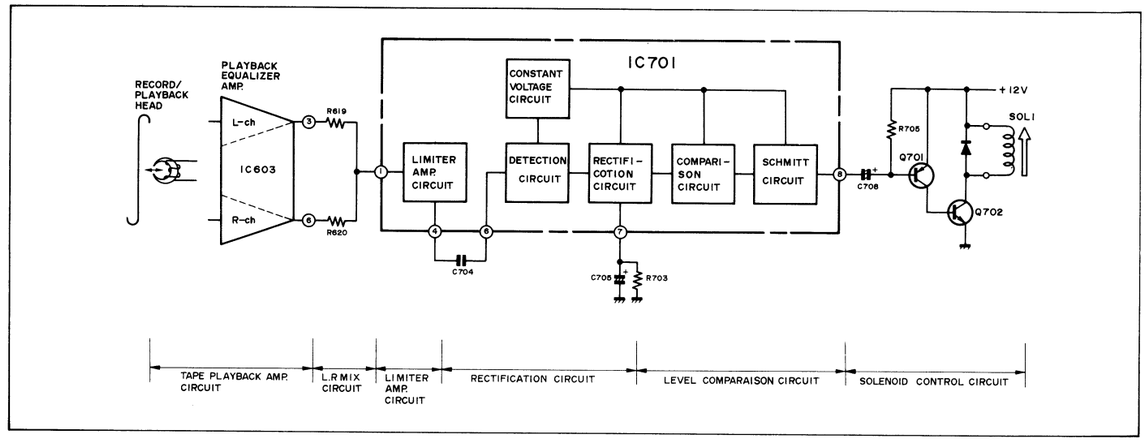


Figure 10-1

- **Notes on APSS Operation**

1. The APSS may not function perfectly at all times if any of the following tapes are used.
   a. The recorded signal on the tape is of an intermittent nature, (speech, music with silent passages, etc.).
   b. The recorded signal on the tape has the characteristic of soft classical music, solo performance, modern jazz, etc.
   c. The recorded signal on the tape is of a low signal strength.
   d. The recorded programme items are separated with less than a three-second gap, (within which there occurs no signal).
   e. The recorded programme items are separated with a gap which is not free of noise or stray signals.
2. When the keys for APSS operation and Pause key are depressed the tape will advance, (or reverse) to an end, if no programme item can be found; and all keys depressed remain engaged. Depress stop/eject key immediately.
3. The unit is situated within the influence of powerful magnetic fields such as those created by the electromagnetic radiation generated from TV sets, dynamos, and a variety of domestic appliances. Keep the unit away from such equipment.

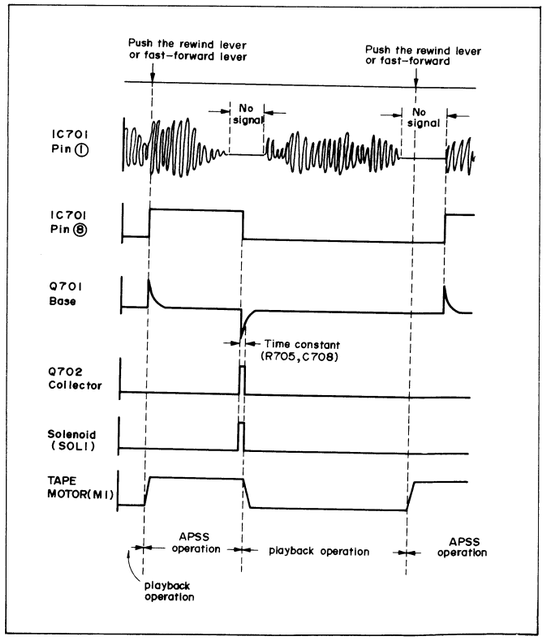


Figure 10-2

MECHANICAL ADJUSTMENT

■ FLYWHEEL THRUST CLEARANCE ADJUSTMENT

In Figure 11-1 adjust the setting position of the thrust adjusting board to make thrust adjusting plate flywheel thrust clearance 0.1 ~ 0.3mm.

Ⓐ: Normal
Ⓑ: Tighten
Ⓒ: Loosen

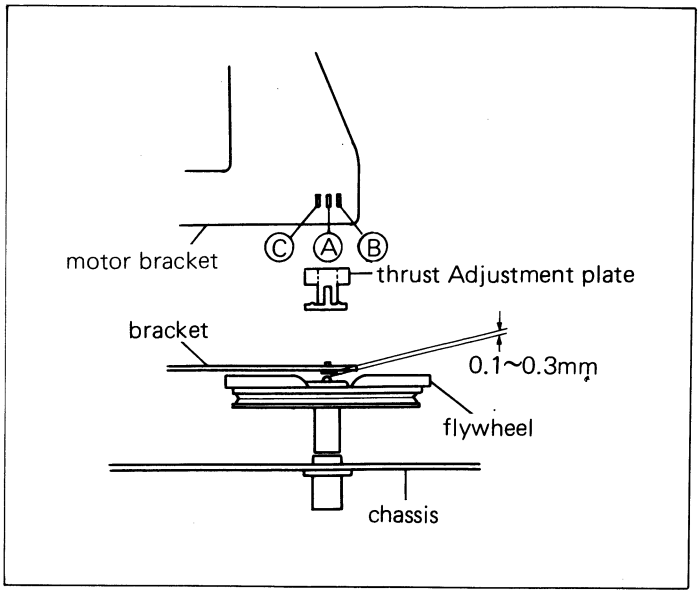


Figure 11-1

■ TORQUE CHECK (Refer to Figure 11-2)

1. Set the torque measuring reel to the turntable (to the take-up side at play or fast forward mode and to the supply side at rewind mode).
2. Then, rotate the reel in the same direction as for turntable and read the torque value when the pointer is stabilized.

Mode	Torque Value
Play	30 ~ 60 gr. cm
Fast Forward	70 ~ 110gr. cm
Rewind	70 ~ 110gr. cm

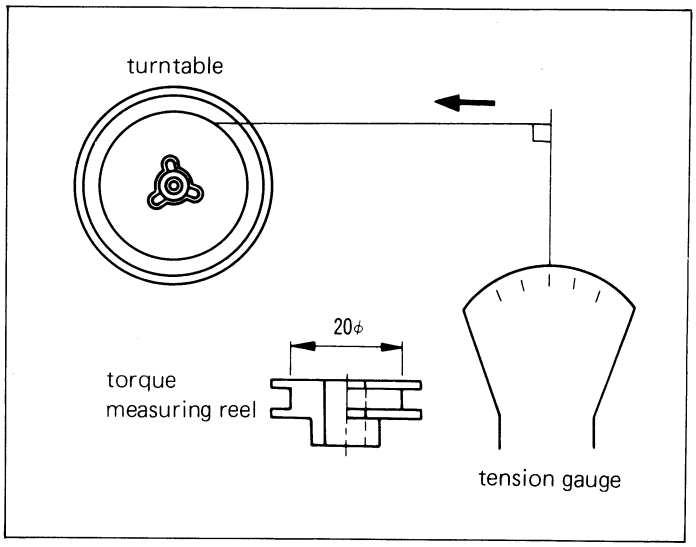


Figure 11-2

■ PRESSURE ROLLER PRESSURE CHECK

(Refer to Figure 11-3)

1. Setting the unit in play mode with power supply turned on, push the point A with use of tension gauge to make the pressure roller apart from the capstan shaft. Then gradually release the tension gauge and read its value when the pressure roller starts to rotate.
2. It is normal when the tension gauge reads 300 ~ 400 grams.

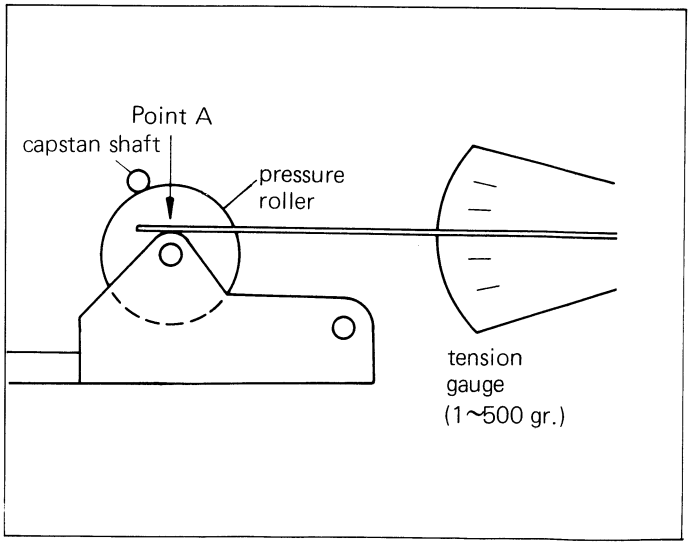


Figure 11-3

PAUSE MECHANISM ADJUSTMENT

(Refer to Figure 12-1)

1. Set the unit in play mode and slowly push the pause key. Make sure that the take-up idler and pressure roller come respectively off the take-up reel and capstan at the same time.
2. If the item 1 above is found not normal, adjust it by bending a part (marked A) of the pressure roller.

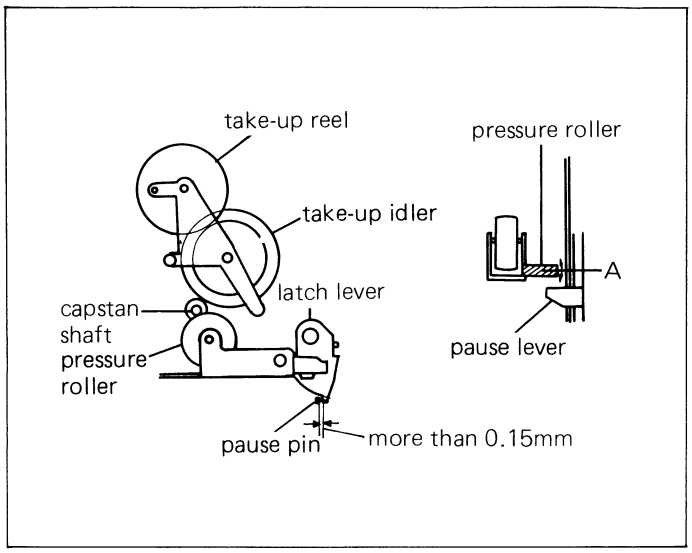


Figure 12-1

TAPE SPEED CHECK (Refer to Figure 12-2)

1. Connect an 4 ohm dummy resistor to the speaker output socket (SO3, SO4).
2. Connect a frequency counter across the 4 ohm resistor.
3. Place the unit in a horizontal position and playback the test tape (TEAC MTT-111, 250 pWb/mm −10 dB, 3 kHz).
4. Ensure that the frequency counter indicates within 2970Hz ~ 3030Hz.

If the tape speed is not within this range, clean the belt, flywheel, capstan, pressure roller and the other running parts. Check the torque of take-up reel and pressure of the pressure roller. Neverthless good results can not be obtained, replace the motor.

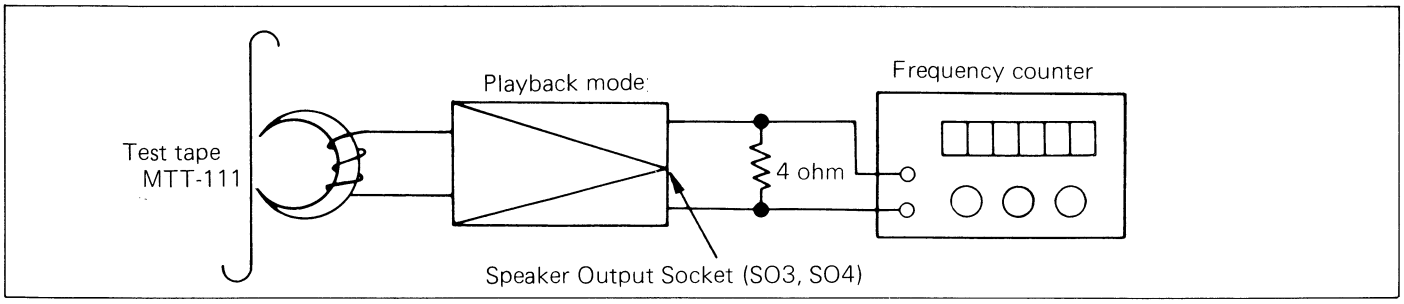


Figure 12-2

ELECTRICAL MEASUREMENT

* Set the Function selector switch (SW1) to the TAPE position.

■ RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

(Refer to Figure 13-1)

1. Connect load resistor (4 ohm) to the Speaker output socket SO3 or (SO4) and further connect the V.T.V.M. thereto.
2. Insert the test tape (MTT-114: 10 kHz, −10 dB Recorded).
3. Set the Dolby NR switch (SW4) and Metal Tape switch (SW3) to the off position.
4. Place the unit in Playback mode.
5. Adjust the head azimuth adjusting screw so that the playback output voltage becomes maximum in both channels.

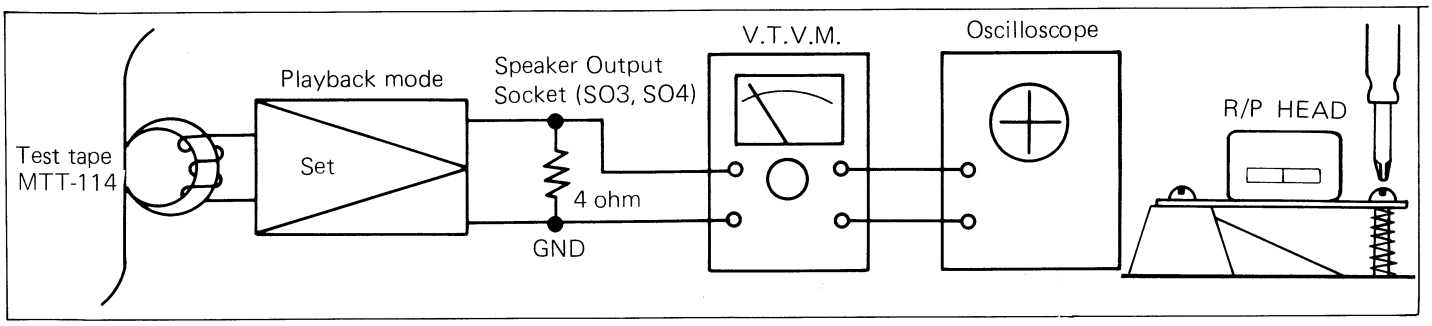


Figure 13-1

■ RECORD AMPLIFIER BIAS OSCILLATOR ADJUSTMENT

(Refer to Figure 13-2)

1. Connect the V.T.V.M. across the 100 ohm resistor R603 (or R604).
2. Set the Metal Tape switch (SW3) to the off position.
3. Place the unit in Record mode and the Beat Canceller switch (SW8) to "A" position.
4. Adjust the semi-variable resistor VR607 (or VR608) so that the V.T.V.M. readings becomes 37mV.
   5 set the Metal Tape switch (SW3) to on position.
5. Make sure the V.T.V.M. readings are 80 ±5mV.

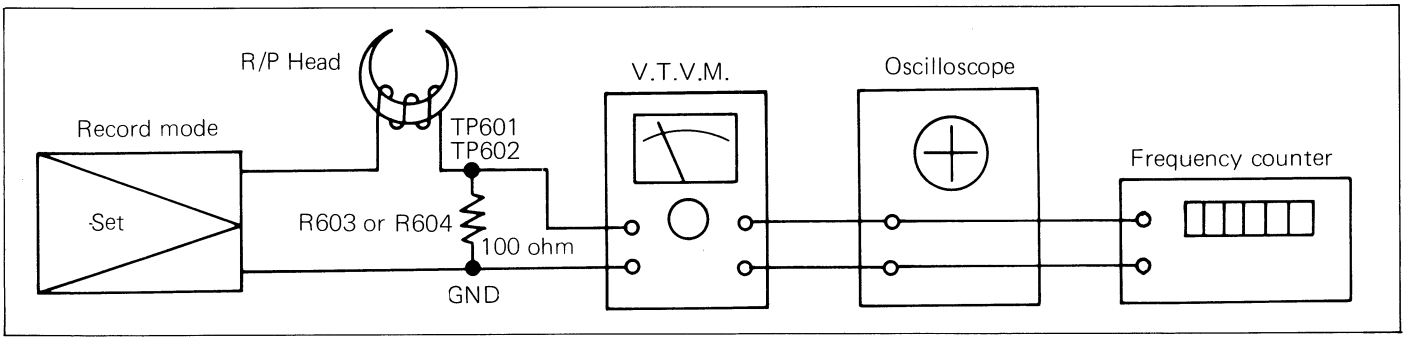


Figure 13-2

■ ERASE CURRENT CHECK (Refer to Figure 13-3)

1. Connect the V.T.V.M. across the 1 ohm resistor.
2. Set the Metal Tape switch (SW3) to the off position.
3. Place the unit in Record mode.
4. Make sure the erase current is 50 ~ 90mV.
5. Set the Metal Tape switch (SW3) to the on position.
6. Make sure the erase current is 120 ~ 170mV and record oscillator bias frequency is 84 ±6 kHz.

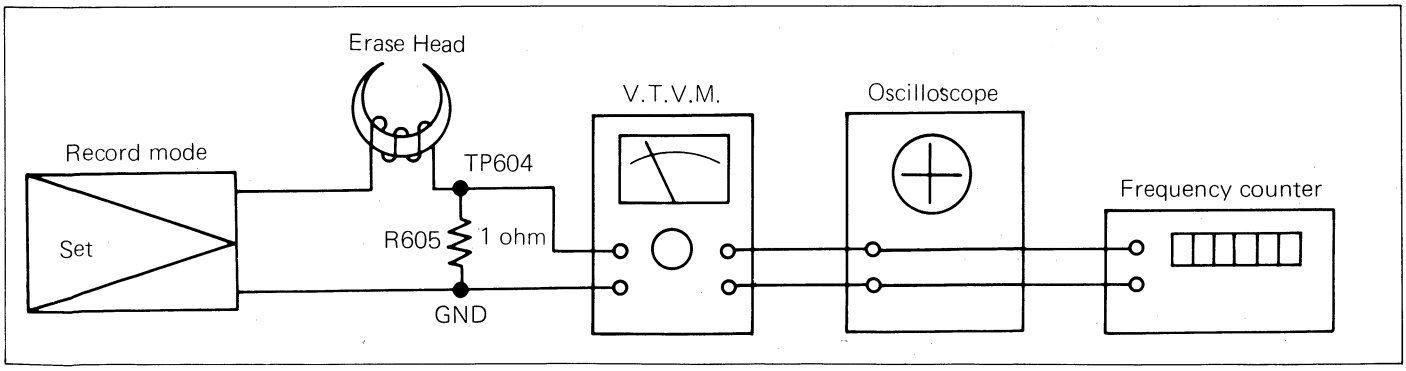


Figure 13-3

■ **PLAYBACK SENSITIVITY ADJUSTMENT** (Refer to Figure 14-1)

1. Connect V.T.V.M. between the test point TP605 (or TP606) and ground.
2. Insert the test tape (MTT-150: 400Hz, 200pWb/mm recorded).
3. Set the Dolby NR switch (SW4) and Metal Tape switch (SW3) to the off position.
4. Adjust the semi-variable resistor VR601 (or VR602) so that V.T.V.M. reading becomes are 580 mV.

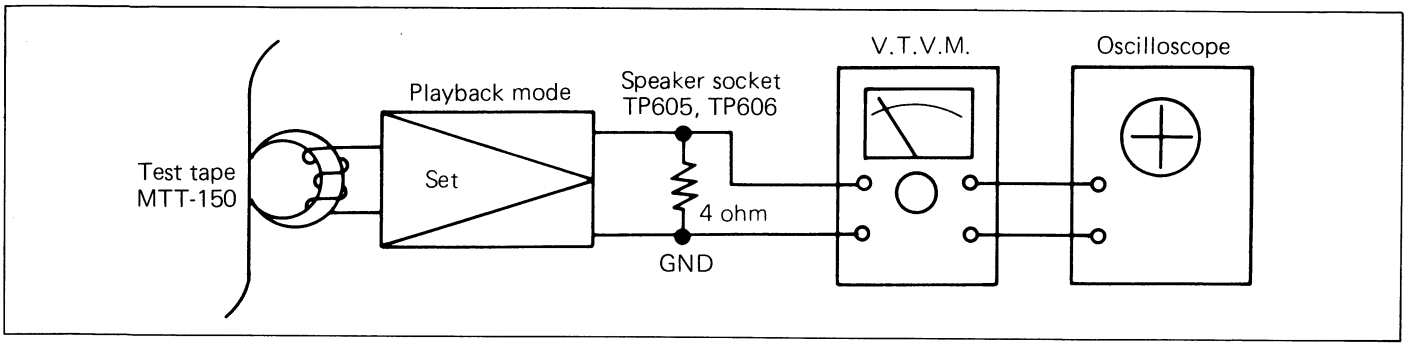


Figure 14-1

■ **RECORD/PLAYBACK SENSITIVITY ADJUSTMENT**
(Refer to Figure 14-2)

1. Insert the normal (non-recorded) tape into the unit.
2. Connect CR oscillator to the microphone jack J601 (or J602), and apply signal (1 kHz, –60 dB) to the unit.
3. Place the unit in Record mode.
4. Adjust the record level control VR201 (or VR202) so that the green LEDs of the record/playback level meter will all light up – to indicate the output is within –13 dB to –3 dB.
5. Reproduce the tape recorded in steps 3 and 4.
6. Adjust the semi-variable resistor VR603 (VR604) so that the green LEDs of the record/playback meter will all light up – to indicate the output is within –13 dB to –3 dB.

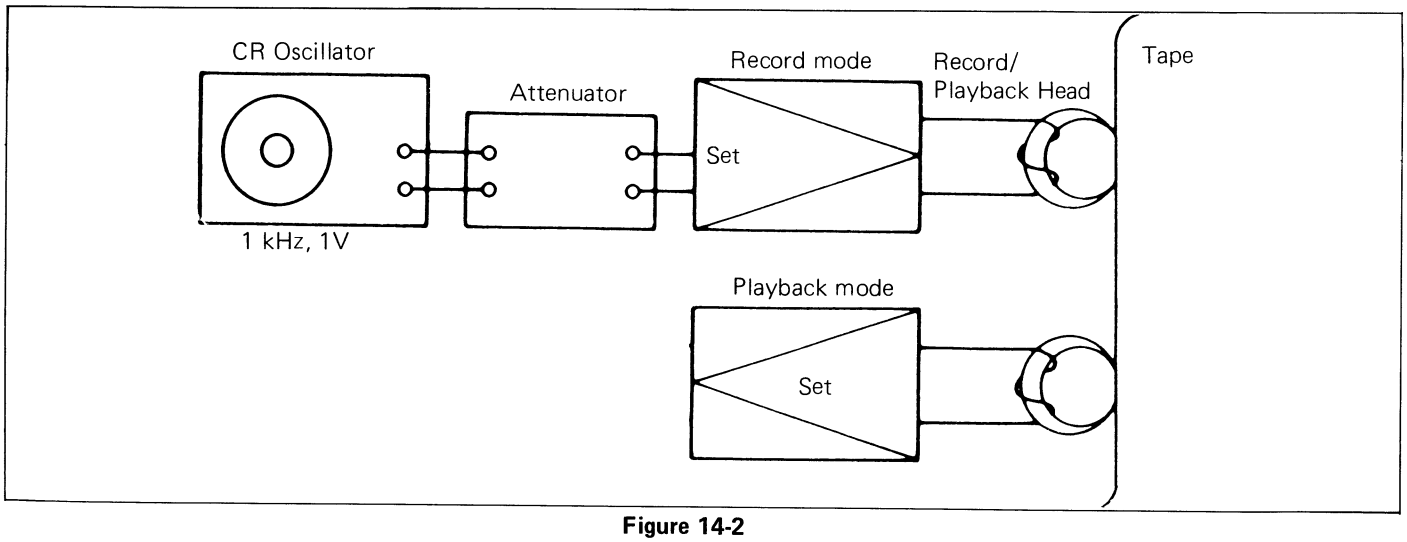


Figure 14-2

■ **DISPLAY ADJUSTMENT OF RECORD/PLAYBACK LEVEL METER** (Refer to Figure 14-3)

1. Connect V.T.V.M. between the test point TP605 (or TP606) and ground.
2. Connect CR oscillator to the microphone jack J601 (or J602), and apply signal (1 kHz, –60 dB) to the set.
3. Place the unit in Record mode, and adjust the record level control VR201 (or VR202) so that V.T.V.M. will read 580mV.
4. Adjust the sensitivity adjustment control VR605 (or VR606) so that the green LEDs of the record/playback level meter will all light up – to indicate the output is within –13 dB to –3 dB.
5. Again adjust the same control as in step 4, but now very minutely, so that the only one red LED will light up – to indicate the output is 0 dB.

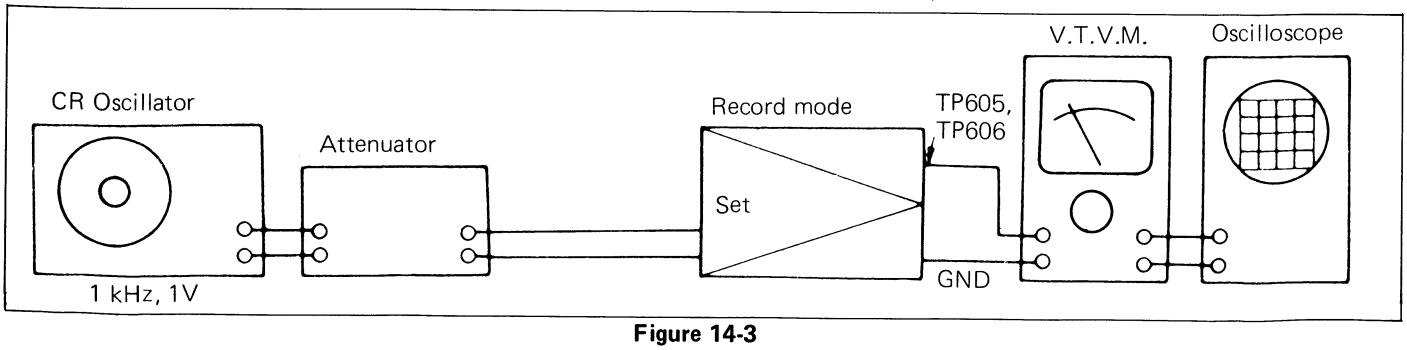


Figure 14-3

■ **DOLBY NOISE REDUCTION CHECK**

(Refer to Figure 15-1)

1. Connect V.T.V.M. between ⑦ pin of IC601 (or IC602) and ground.
2. Insert the non-recorded tape into the unit.
3. Set the Dolby NR switch (SW4) to off position.
4. Connect the CR oscillator to the microphone Jack J601 (or 602) and apply signal (100Hz, –60dB) to the unit.
5. Place the unit in record mode, and adjust the record level control VR201 (or VR202) so that V.T.V.M. reads 32.6mV.
6. Set the Dolby NR switch (SW4) to on position, apply signal (1 kHz) to the unit; if the V.T.V.M. reading becomes 43 to 85mV then, this means the Dolby noise reduction is normal.

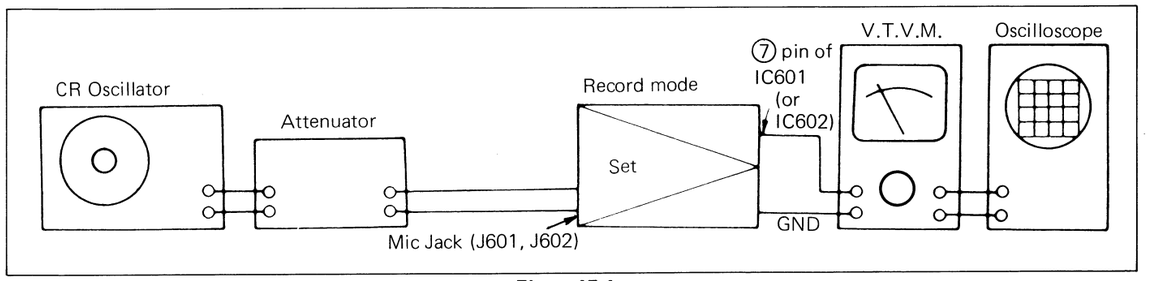


Figure 15-1

PLAYER ADJUSTMENT

■ **ADJUSTMENT OF TONEARM AUTOMATICALLY RETURN POSITION**

(Refer to Figure 15-2 and 15-3)

1. Remove the turntable mat and platter
2. Rotate the Tonearm return gear for arrow.
3. Adjust the adjusting screw Ⓐ so that the turntable shaft will be able to rotate smoothly, with the teeth of the tonearm return gear no longer engaging with those of the turntable shaft gear.
4. Reset the turntable to its place, play a record and check for the automatically return starting position.
   * If the tonearm begins to move back even before a record play has not yet reached its end, rotate the adjusting screw Ⓑ counterclockwise, until the automatically return operation becomes able to start from its proper position.
   * If the tonearm is still stopped even after a record play has reached its end, rotate the adjusting screw Ⓑ clockwise, until the automatically return operation becomes able to start from its proper position.

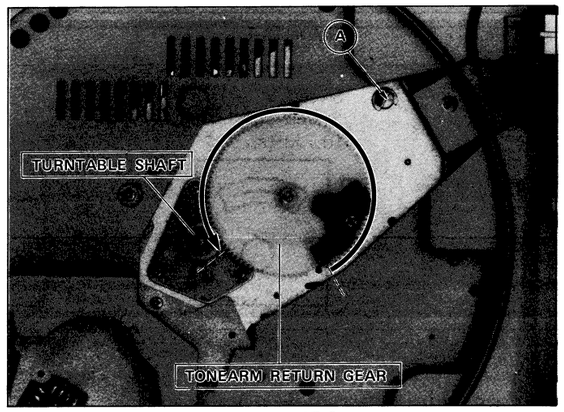


Figure 15-2

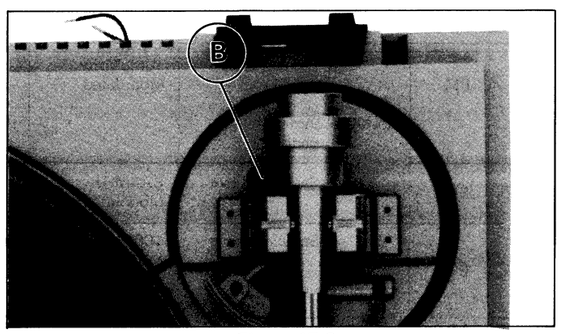


Figure 15-3

ALIGNEMENT INSTRUCTIONS OF TUNER

Alignment is an exacting procedure and should be undertaken only when necessary.
If alignment of MW/LW and FM is required, either section may be done first.

REQUIRED EQUIPMENT

1. Signal generator with a frequency range of 145 kHz to 1650 kHz: AM
2. Signal generator with a frequency range of 87.1 MHz to 109 MHz: FM
3. Signal generator with a frequency output of 10.7 MHz ± 0.5 MHz: FM
4. Vacuum tube voltmeter (AC-V.T.V.M.)
5. Sweep signal generator with a sweep range of at least 500 kHz and center frequency of 10.7 MHz with at least a 10.7 MHz marker. (Ext. Marker may be used.)
6. Oscilloscope with a wide range amplifier of approximately 100 kHz.
7. Test loops, a coil of any size wire, one turn or more.
8. FM stereo signal generator.
9. Audio signal generator with a frequency of 20 Hz to 100 kHz.
10. Frequency counters with a frequency of 10 kHz to 100 kHz.

The FM stereo section, however, should be done only if the FM monaural section is properly adjusted.
Notes: Don't use a metallic screw driver.

Notes:
Allow the set at least five minutes to warm up before attempting alignment. During alignment keep the signal generator output at the lowest level that will maintain a usable output from the set, except for FM stereo signal generator. Take much care, lest the grounding of FM sweep signal generator input should make multipaths which made FM IF alignment incorrent. To avoid this the grounding lead may be connected through 0.01 – 0.04 MFD capacitor to the tuner chassis when sweep generator is connected to the tuner section.

Ground connection of signal generator . . . . . Shield Case
Generator modulation (AM) . . . . . 30%, 400 Hz
Generator modulation (FM) . . . . . 40 kHz, 400 Hz
Generator modulation (FM stereo) . . . . . CH.L. or CH.R. 40 kHz, 1000 Hz Mod.

THE INSTRUCTION OF FREQUENCY ADJUSTMENT (SG-270H ONLY)

In order to comply with FTZ rule: Nr. 358/1970, please fix the low end of dial frequency (87.6 MHz) and the high end of dial frequency (108MHz) on FM band, by adjusting oscillation coils (L103) and oscillation trimmer (TC103), respectively, as illustrated in Figure 20-1.

ALIGNMENT PROCEDURE

■ **AM IF ALIGNMENT** (Refer to Figure 16-1 and 16-2)

STEP	BAND	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	SCOPE CONNECTION	ADJUSTMENT	REMARKS
			CONNECTION	FREQUENCY				
1	MW	IF	Thru 0.01MFD to Q105 (Base) as small as possible.	455 kHz SG-270H SG-270E (for SCA) 468 kHz SG-270E (for UK)	High end of Dial	Oscilloscope connected to TP103 and TP104 (GND).	T103 T104	Adjust for maximum output. Repeat 2 or 3 times.

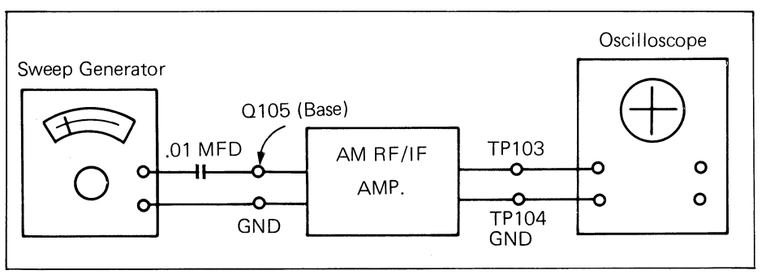


Figure 16-1

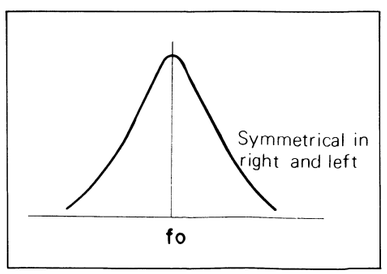


Figure 16-2

■ AM RF ALIGNMENT (Refer to Figure 17)

STEP	BAND	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
			CONNECTION	FREQUENCY				
1	LW	Band Coverage	Connect AM signal generator to the loop antenna and place this assembly at near the bar antenna coil (L105). (Keep the input be closed as much as possible.)	145 kHz Modulated	Low end of Dial	V.T.V.M connected to TP103	Oscillator coil L107	Adjust for maximum output. Repeat 2 or 3 times.
2	LW			295 kHz Modulated	High end of Dial	Same as above	Oscillator Trimmer TC107	Same as above
3	LW	Tracking		160 kHz Modulated	160 kHz (Shown in Figure 19-3)	Same as above	Antenna coil L105	Same as above
4	LW			260 kHz Modulated	260 kHz (Shown in Figure 19-3)	Same as above	Antenna Trimmer TC105	Same as above
5	MW	Band Coverage		515 kHz Modulated	Low end of Dial	Same as above	Oscillator coil L106	Same as above
6	MW			1650 kHz Modulated	High end of Dial	Same as above	Oscilllator Trimmer TC106	Same as above
7	MW	Tracking		600 kHz Modulated	600 kHz (Shown in Figure 19-3)	Same as above	Antenna coil L105	Same as above
8	MW			1400 kHz Modulated	1400 kHz (Shown in Figure 19-3)	Same as above	Antenna Trimmer TC104	Same as above
9	If necessary, repeat step 1 to step 8.							

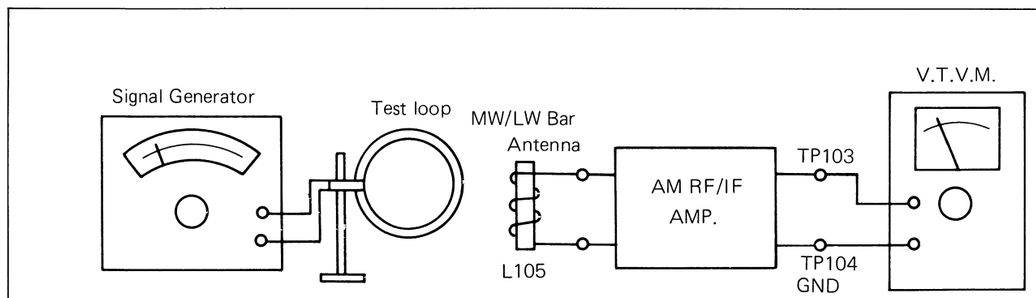


Figure 17

■ FM IF ALIGNMENT (Refer to Figure 18-1 ~ 18-3)

STEP	BAND	SIGNAL GENERATOR		DIAL POINTER SETTING	SCOPE CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY				
1	FM	Thru 1.5 PF to TP101	10.7MHz ±300kHz	High end of Dial	TP102	T101	Set curve at maximum as shown in the Figure 18-1. Repeat 2 or 3 times.
2	FM	Same as above	10.7MHz ±400kHz	High end of Dial	TP102	T102	Adjust "S" curve at maximum as shown in the Figure 18-2. Adjust 10.7MHz at the center of "S" curve.
3	Repeat adjustments to obtain "S" curve as shown in Figure 18-2.						

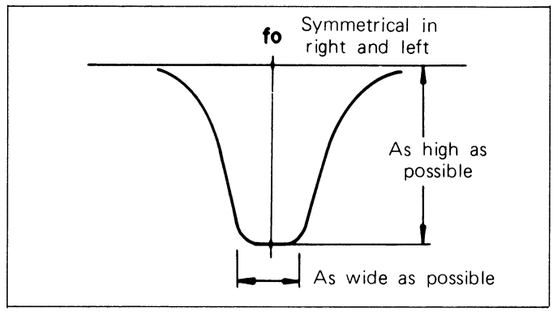


Figure 18-1

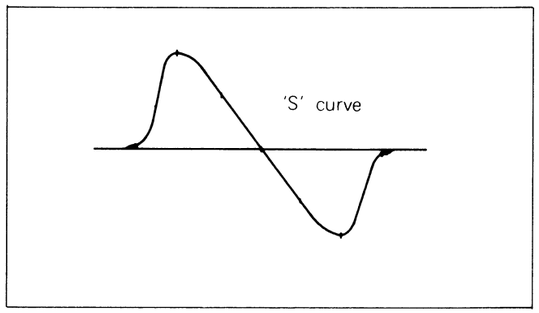


Figure 18-2

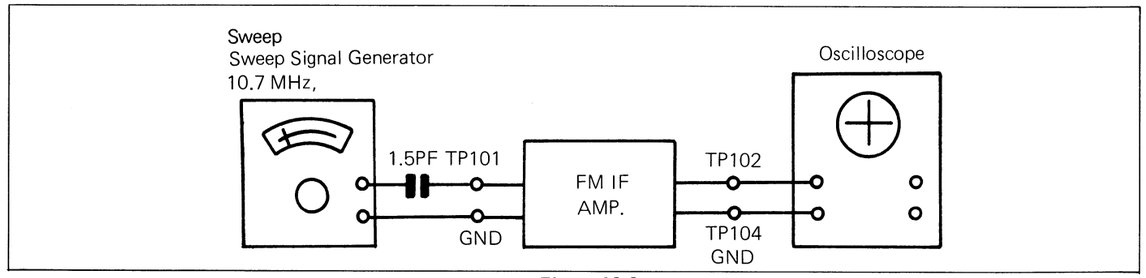


Figure 18-3

■ FM RF ALIGNMENT (Refer to Figure 19-1)

STEP	BAND	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
			CONNECTION	FREQUENCY				
1	FM	Band Coverage	FM External Aerial socket (through 300 ohm matching pad)	108.5MHz Modulated	High end of Dial	TP102	Oscillator Trimmer TC103	Adjust for maximum output.
2	FM		Same as above	87.1MHz Modulated	Low end of Dial	Same as above	Oscillator Coil L103	Same as above
3	FM	Tracking	Same as above	106MHz Modulated	106MHz (Shown in Figure 19-3)	Same as above	RF Trimmer TC102 ANT Trimmer TC101	Same as above
4	FM		Same as above	90MHz Modulated	90Hz (Shown in Figure 19-3)	Same as above	RF Coil L102 ANT Coil L101	Same as above
5	If necessary, repeat step 1 to step 4.							

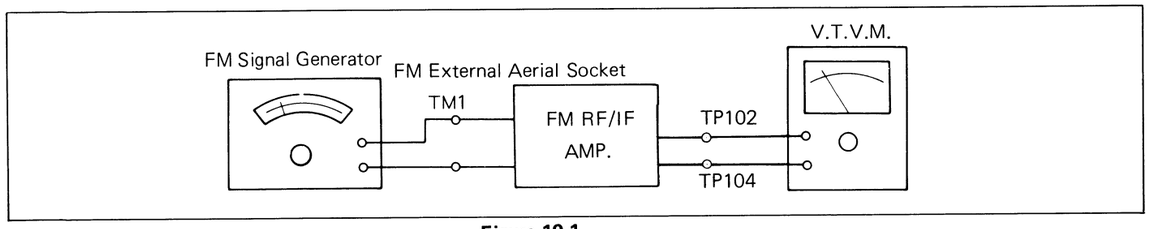


Figure 19-1

■ FM STEREO ALIGNMENT (Refer to Figure 19-2)

STEP	BAND	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
			CONNECTION	FREQUENCY				
1	FM ST	V.C.O.	FM External Aerial socket	98MHz Modulated	98MHz	TP105	VR101	Adjust for 76 kHz ±76Hz

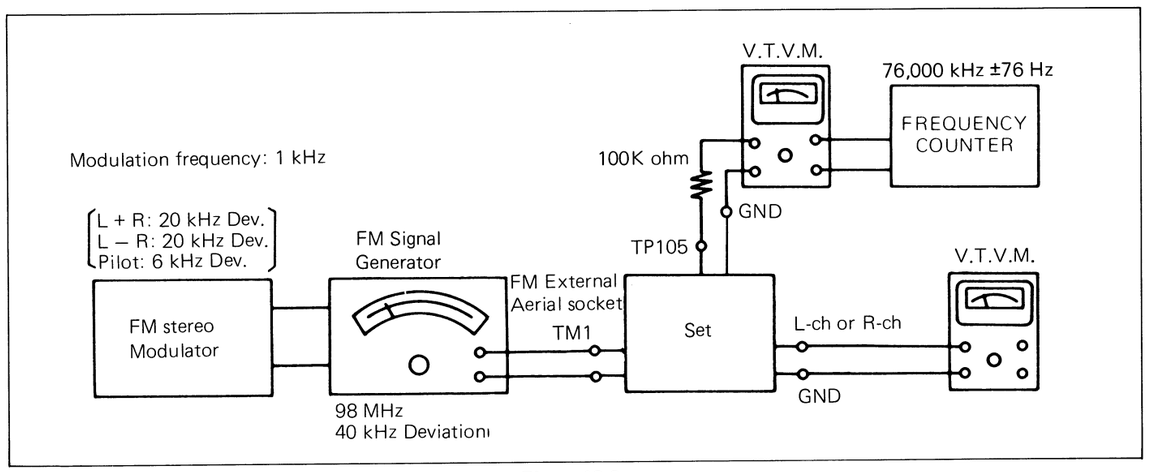


Figure 19-2

■ FM STEREO LIGHT UP LEVEL ADJUSTMENT (Refer to Figure 19-2)

1. Set the function selector at "FM ST" position.
2. Connect FM signal generator (98 MHz stereo mod. 1000 Hz) to the FM external aerial socket, and tune in that signal exactly.
3. Adjust the attenuator of FM signal generator to reduce the output at the FM external aerial socket to be 6 dB, and adjust the semi-variable resistor VR102 so that FM stereo indicator LED (LED801) will light up.

Note:
The FM stereo indicator should never light up if the output becomes below 6 dB.

■ DIAL POINTER SETTING

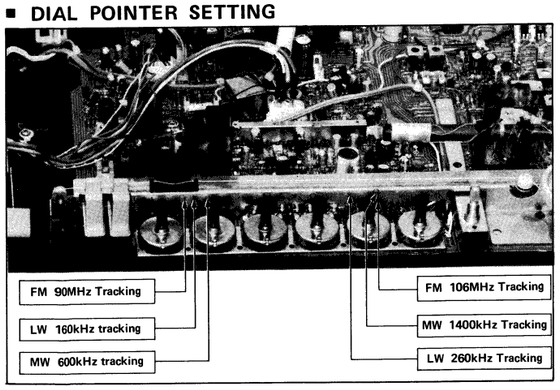


Figure 19-3

The marks "**I**", "X" and "O" will be used in either LW, MW or FM tracking.

- "**I**" marks in three positions.
  The left is for FM 90MHz tracking, the middle for FM 98MHz tracking and the left for FM 106MHz tracking.
- "X" marks in three positions:
  The left is for LW 160kHz tracking, the middle for LW 220kHz tracking and the right for LW 260kHz tracking.
- "O" marks in three positions:
  The left is for MW 600kHz tracking, the middle for MW 1000kHz tracking and the right for MW 1400kHz tracking.

ALIGNMENT POINTS

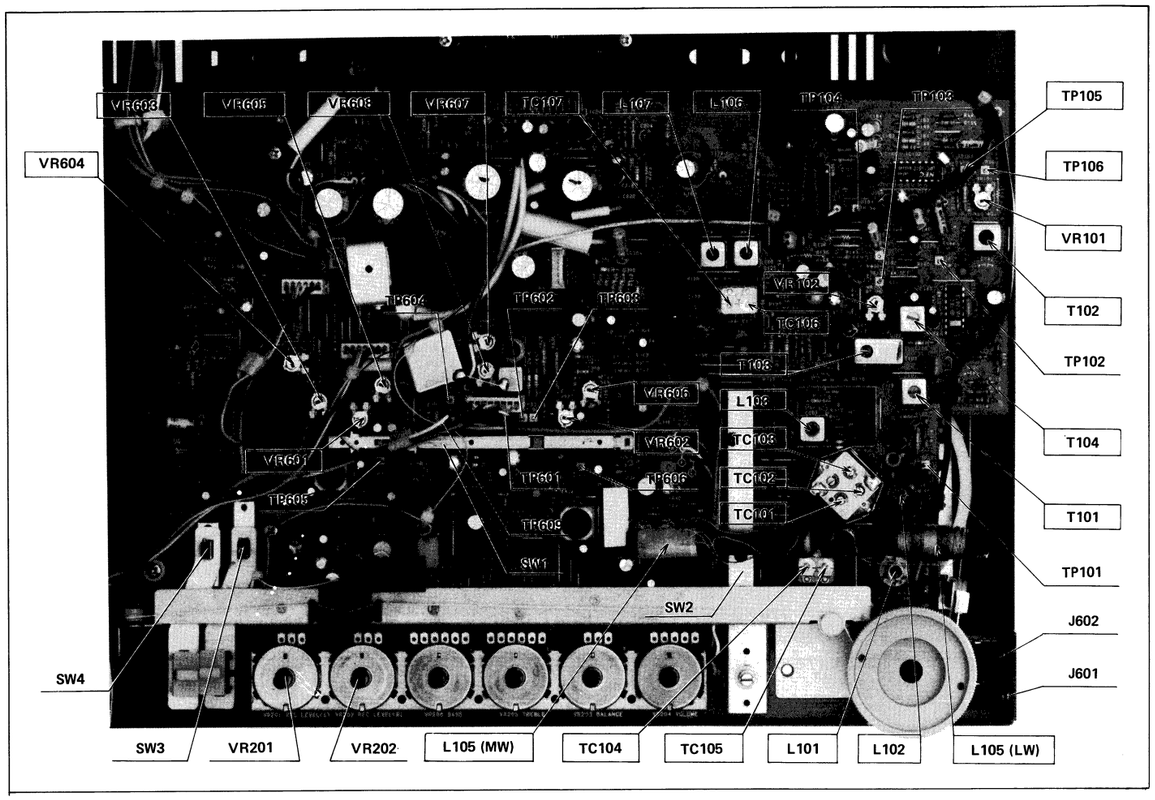


Figure 20-1

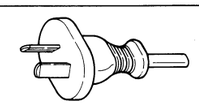
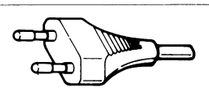
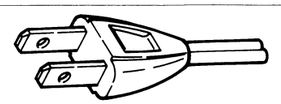
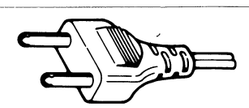
AC supply cord	Bushing	Connection		Figure
		1	2	
QACCL0051AFZZ	LBSHC0004AFZZ	Blue	Brown	
QACCV0001AGZZ	LBSHC0004AGZZ	Blue	Brown	
QACCZ0002TA0F	LBSHC0004AFZZ	Brown	Brown	
QACCZ0053AF00	LBSHC0053AFZZ	Black	Black	
QACCB0052AF09	LBSHC0002AGZZ	Brown	Blue	

Figure 20-2

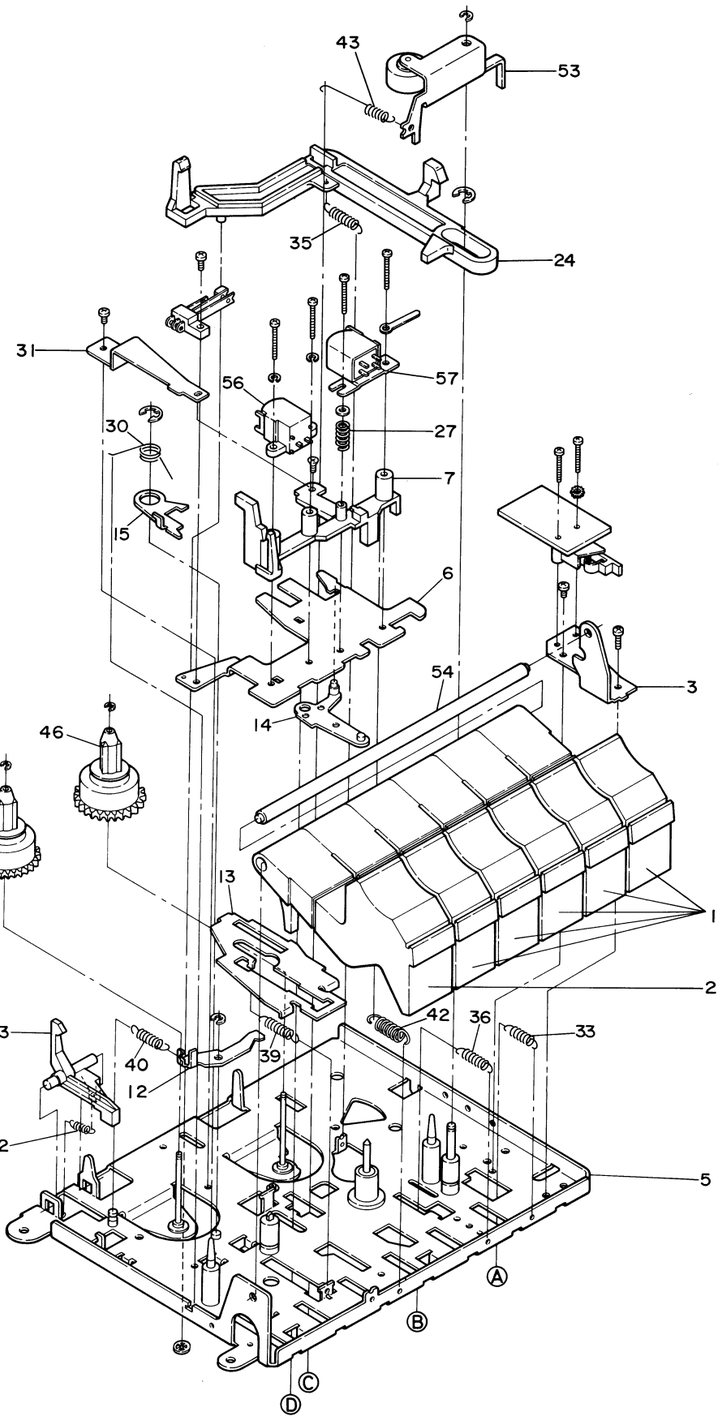


Figure 21 TAPE-DECK MECHANISM EXPLODED TOP VIEW

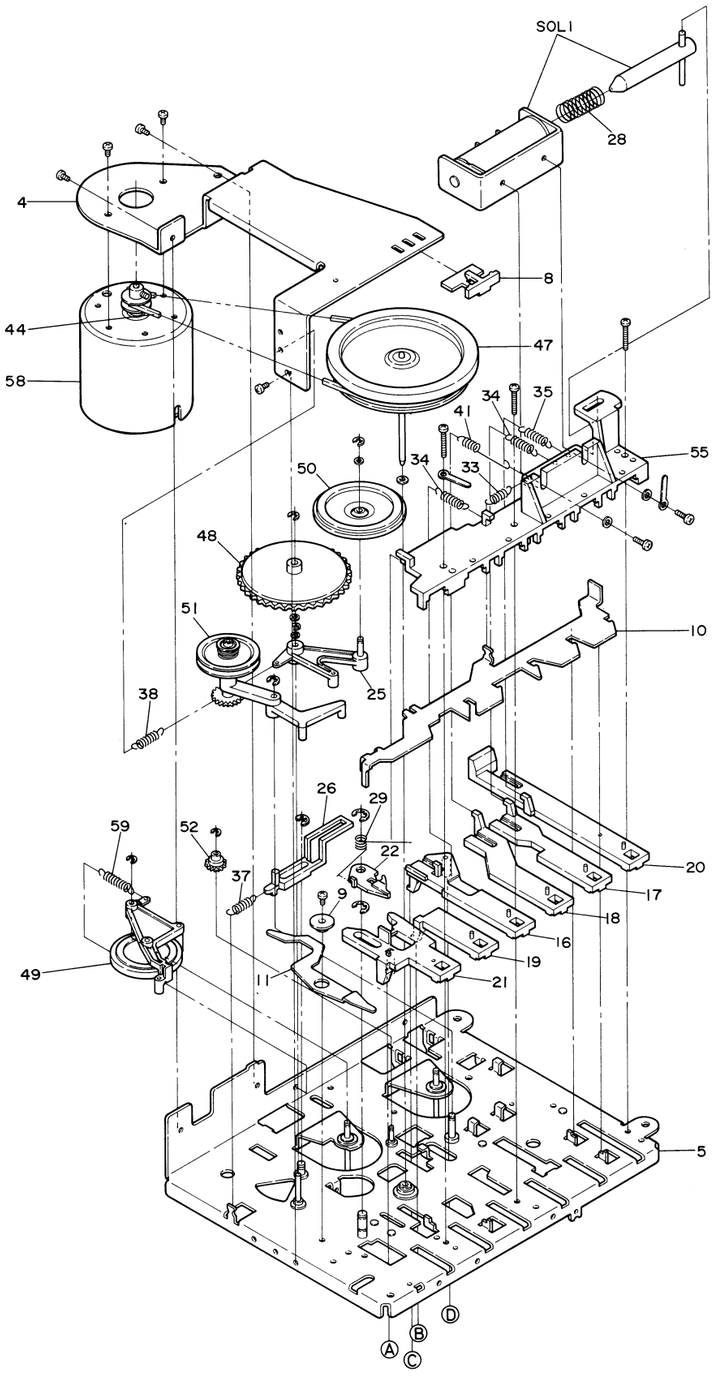


Figure 22 TAPE-DECK MECHANISM EXPLODED BOTTOM VIEW

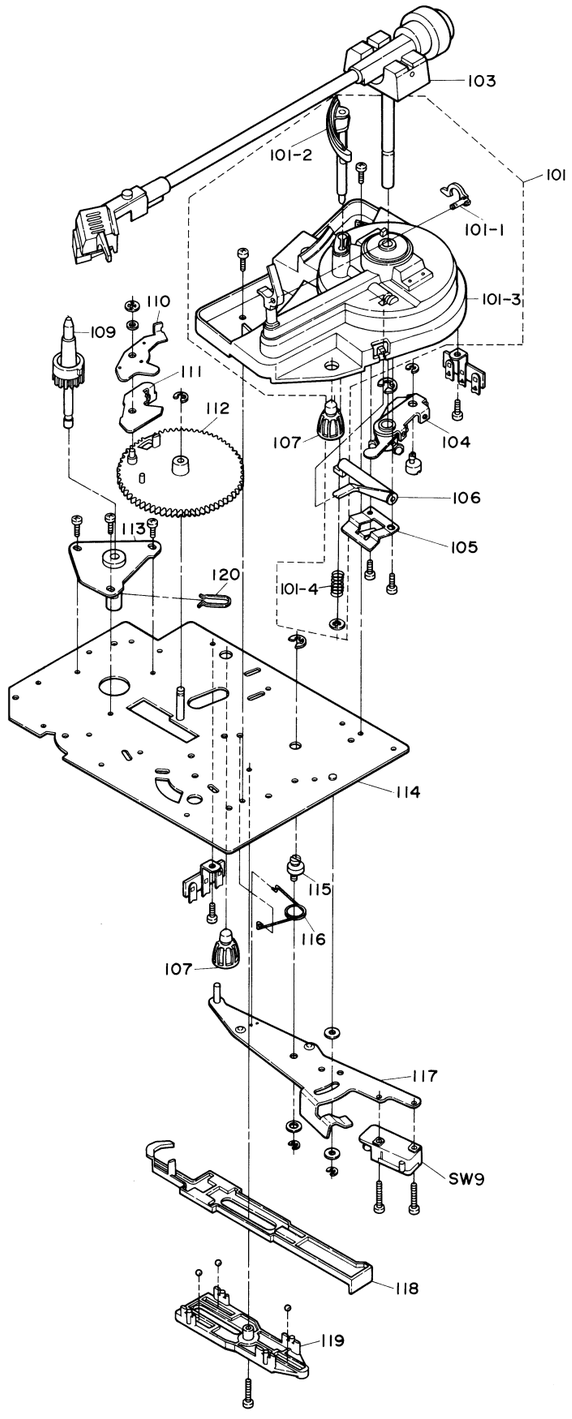
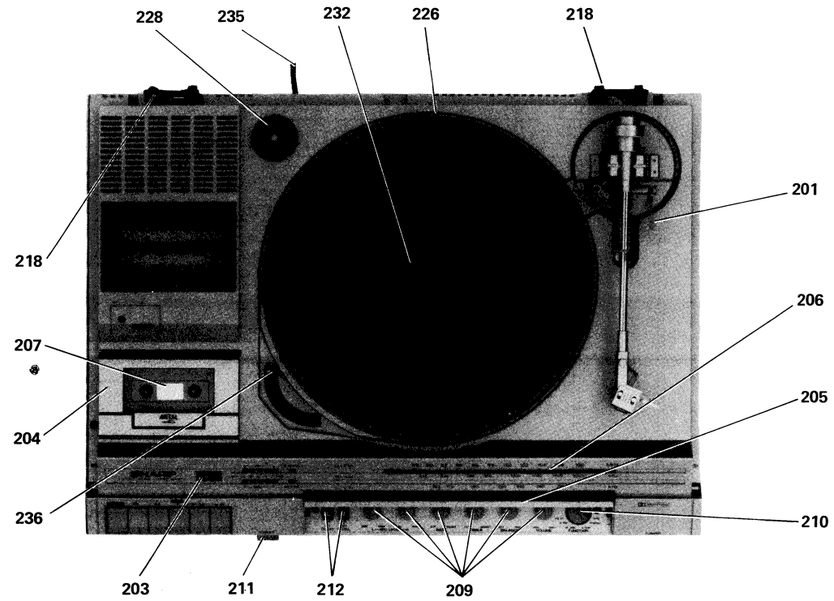


Figure 23 PLAYER MECHANISM EXPLODED VIEW



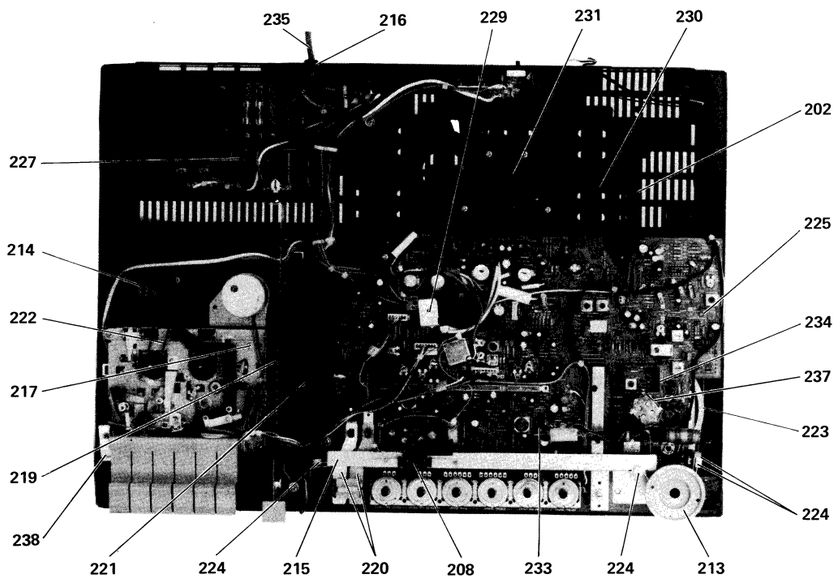


Figure 24

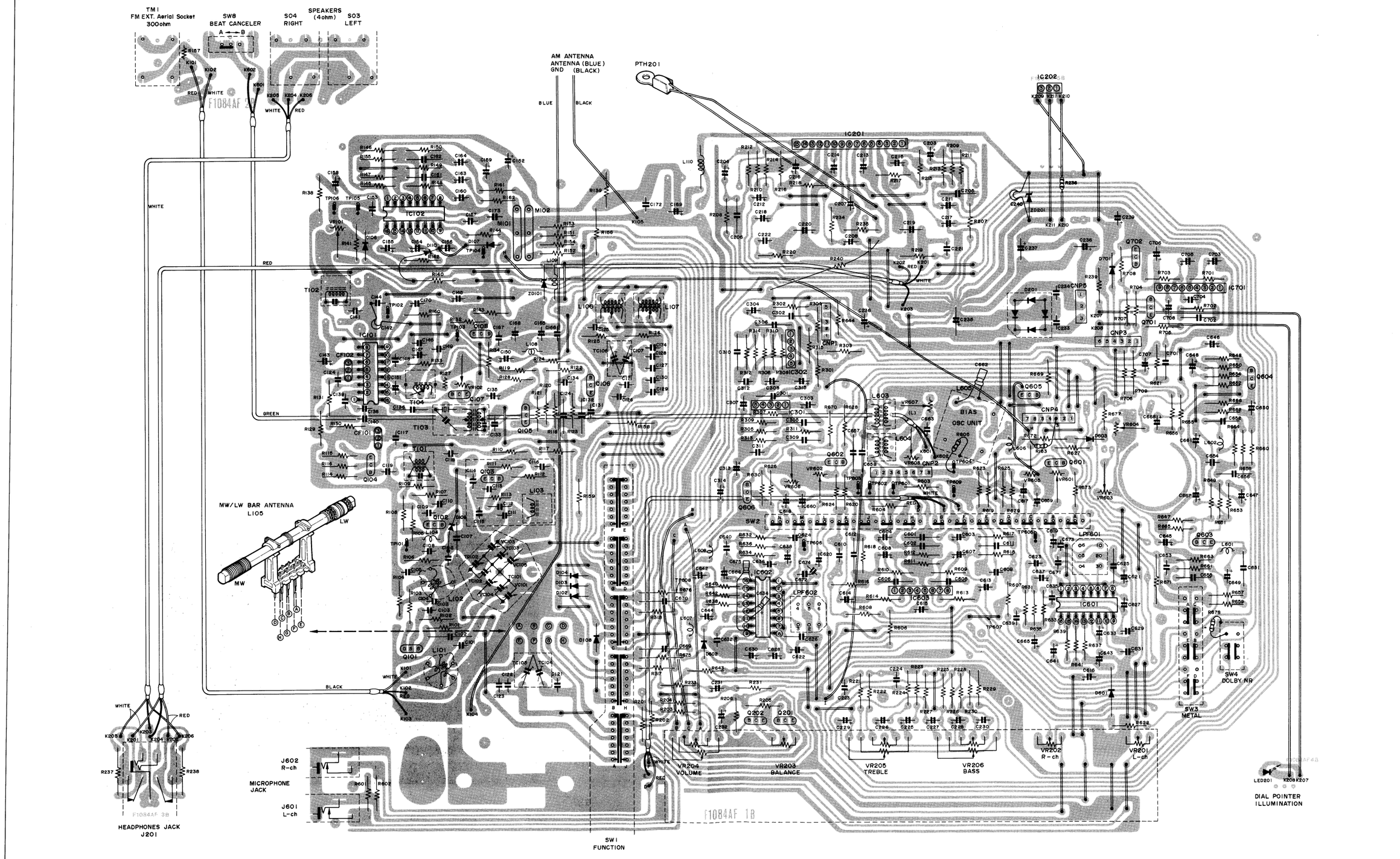


Figure 25 WIRING SIDE OF P.W. BOARD

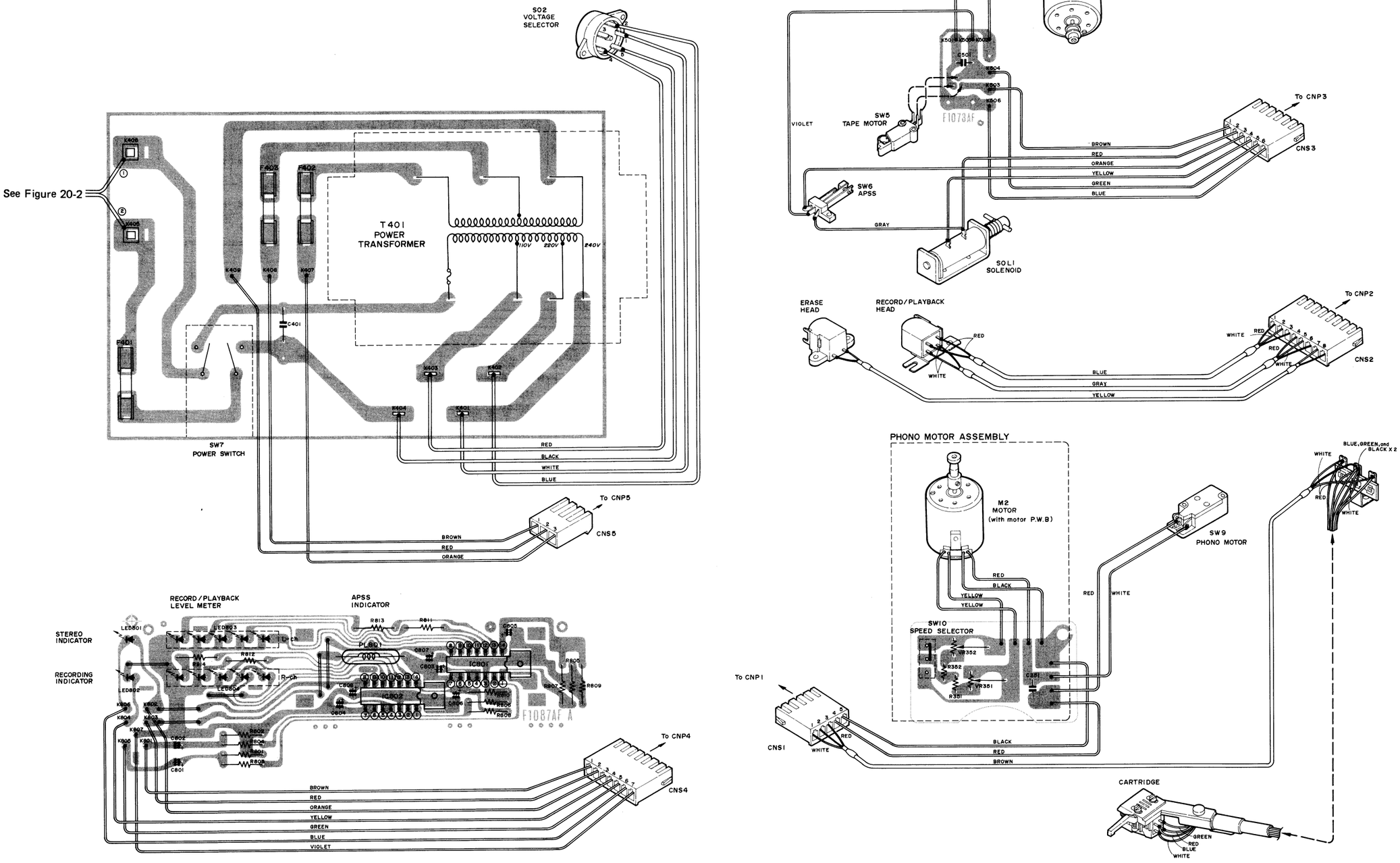
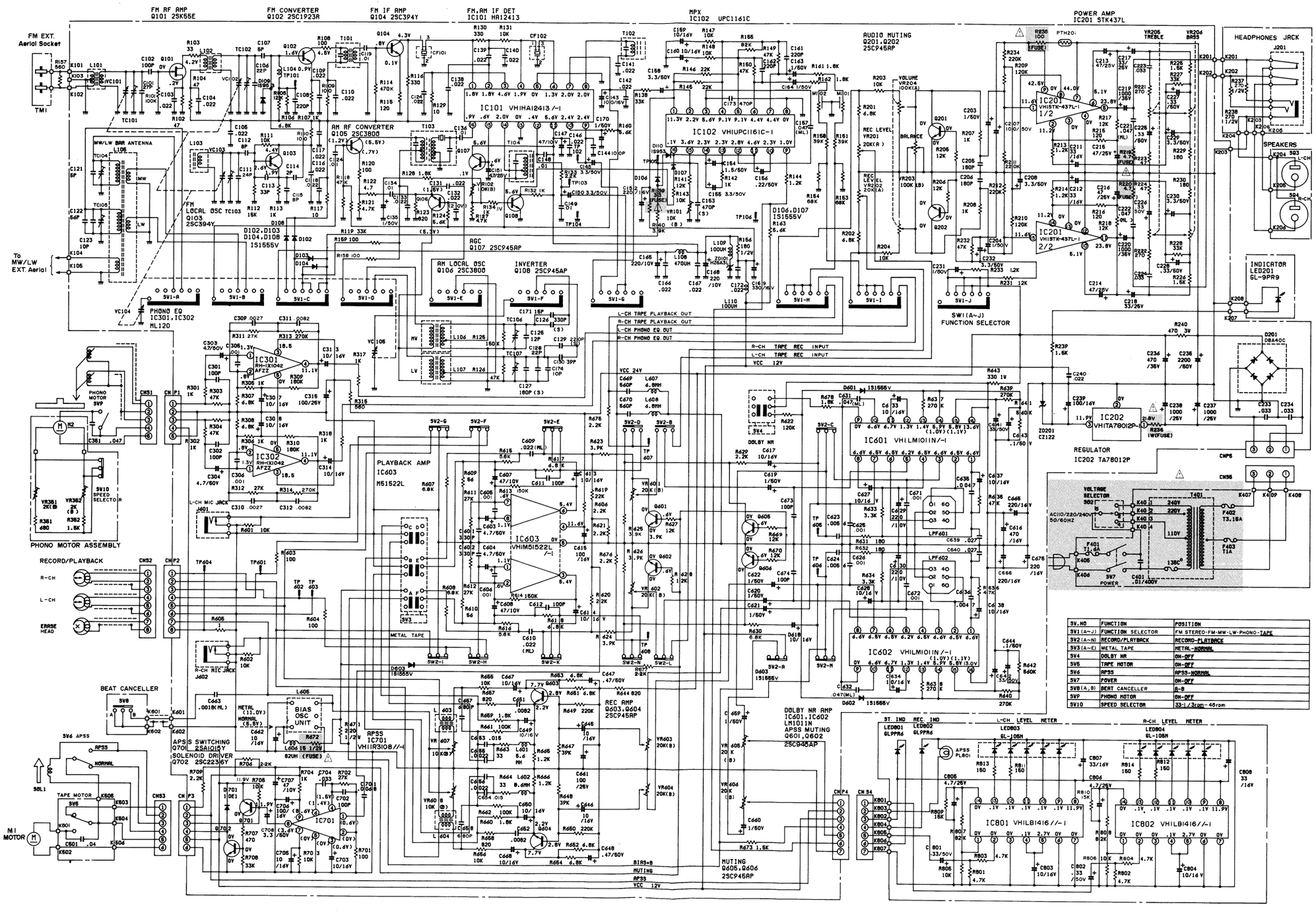


Figure 27 WIRING SIDE OF P.W. BOARD



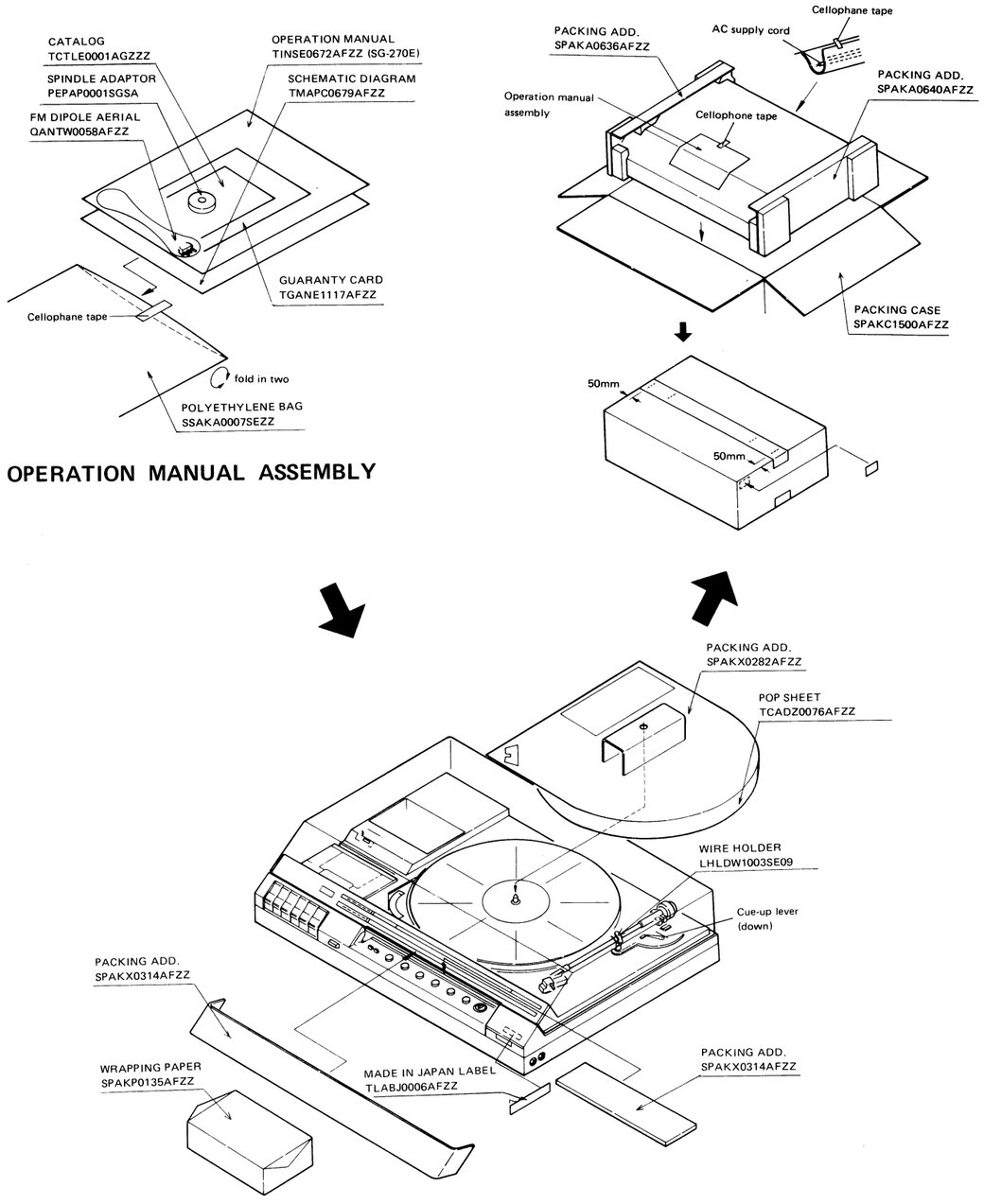
SW.NO	FUNCTION	POSITION
SW1(A~J)	FUNCTION SELECTOR	FM STEREO-FM-MW-LW-PHONO-TAPE
SW2(A~N)	RECORD/PLAYBACK	RECORD-PLAYBACK
SW3(A~E)	METAL TAPE	METAL-NORMAL
SW4	DOLBY NR	ON-OFF
SW5	TAPE MOTOR	ON-OFF
SW6	APSS	APSS-NORMAL
SW7	POWER	ON-OFF
SW8(A,B)	BEAT CANCELLER	A-B
SW9	PHONO MOTOR	ON-OFF
SW10	SPEED SELECTOR	33-1/3rpm-45rpm

(Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.)

Be sure to use regular parts for securing the safety and reliability of the set. Parts marked with "⚠" and parts crosshatched (in black) are especially important for maintaining the safety and protecting ability of the set.
Be sure to replace them with parts of specified part number.

Figure 29 SCHEMATIC DIAGRAM

SG-270E for UK only



OPERATION MANUAL ASSEMBLY

Figure 31 PACKING METHOD (SG-270E for UK)

RH-IX1042AFZZ (IC301, IC302)

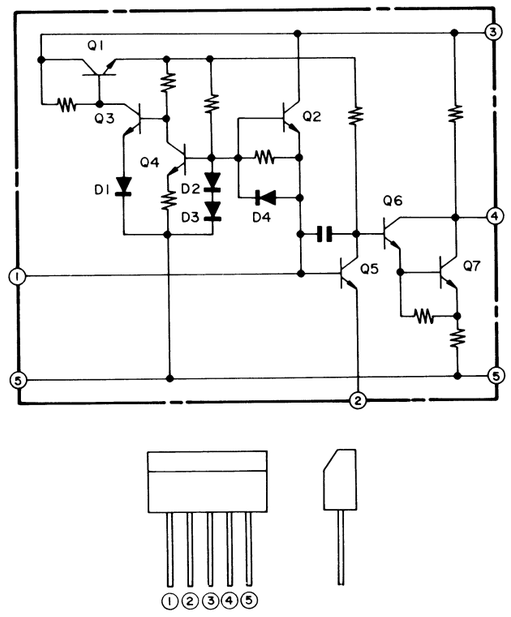


Figure 32-1 EQUIVALENT CIRCUIT OF IC

VHILM1011/-1 (IC601, IC602)

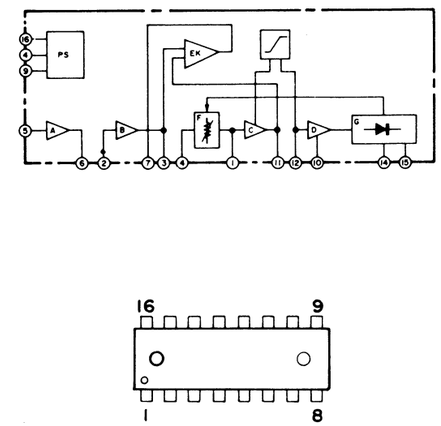


Figure 32-2 BLOCK DIAGRAM OF IC

VHIHA12413/-1 (IC101)

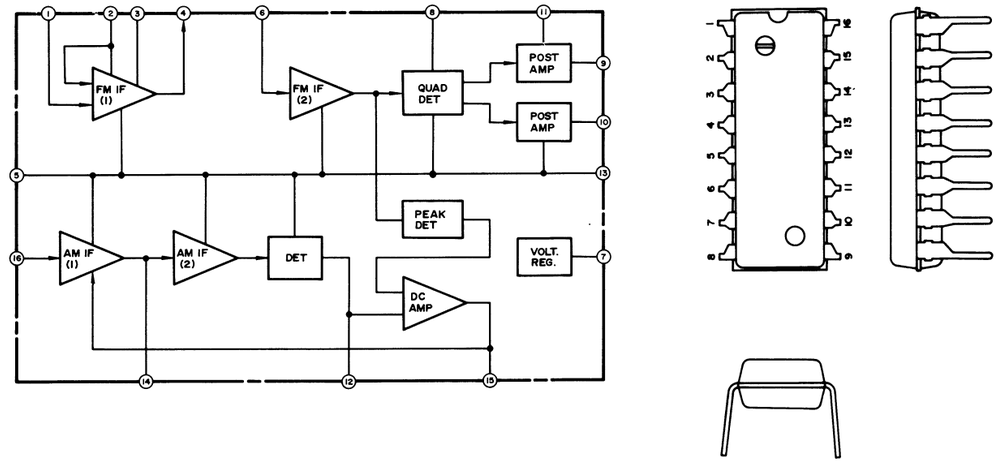


Figure 32-3 BLOCK DIAGRAM OF IC

VHIUPC1161C-1 (IC102)

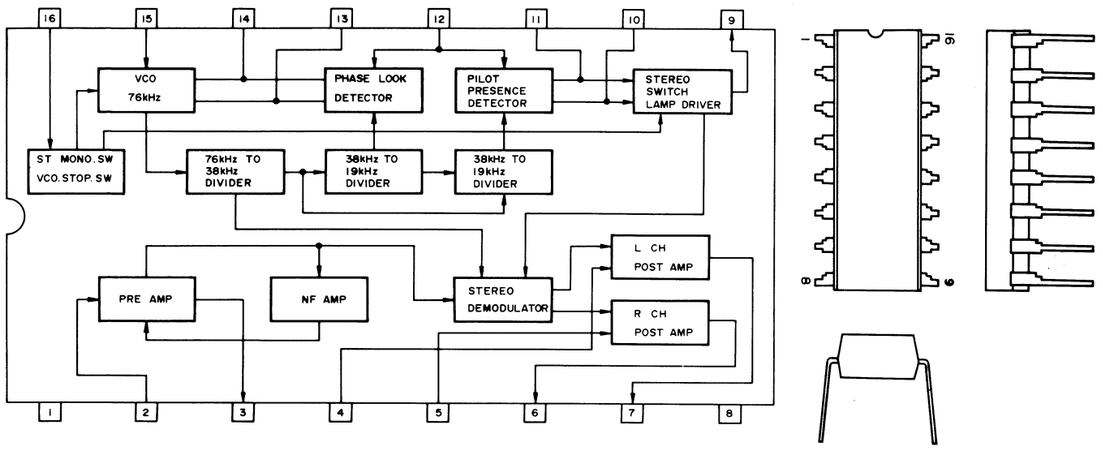
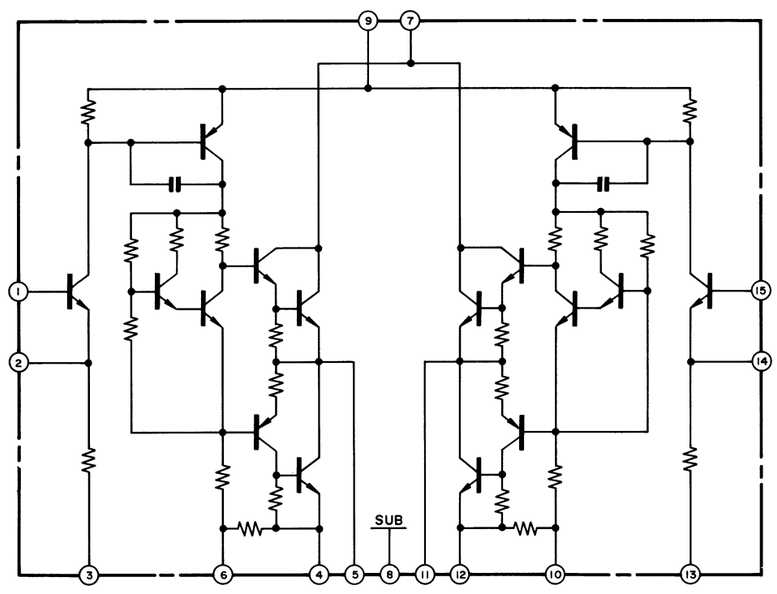


Figure 33-1 BLOCK DIAGRAM OF IC

VHISTK-437L-1 (IC201)



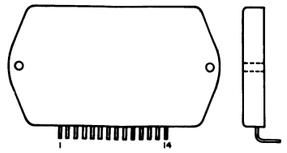
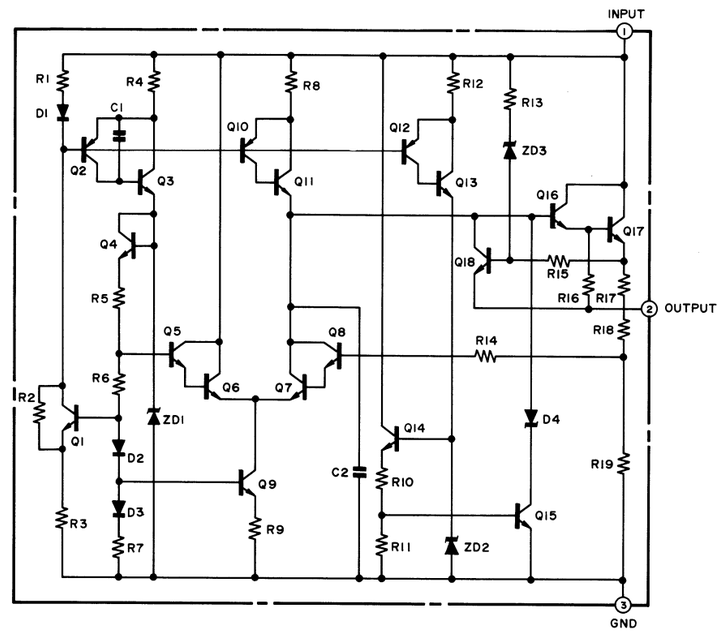


Figure 33-2 EQUIVALENT CIRCUIT OF IC

VHITA78012P-1 (IC202)



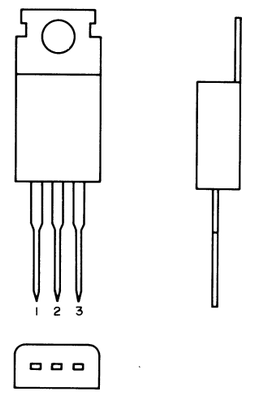
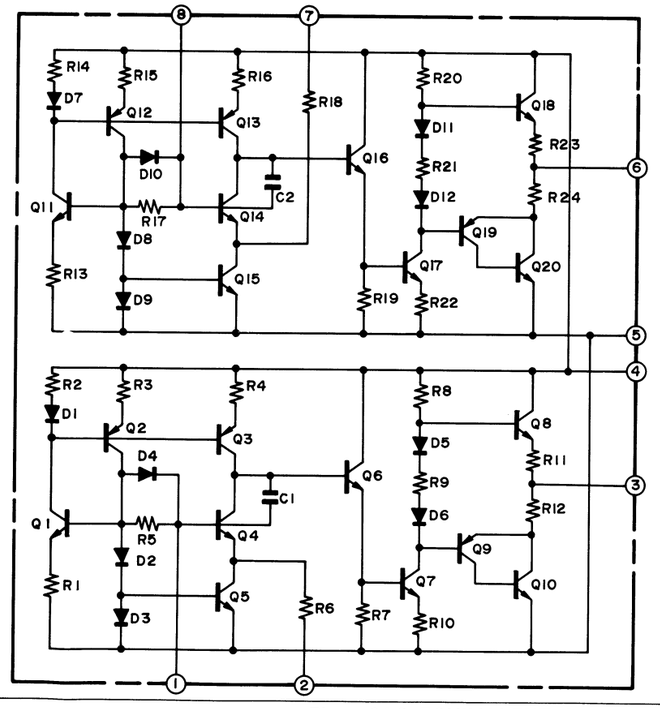


Figure 34-1 EQUIVALENT CIRCUIT OF IC

VHIM51522L/-1 (IC603)



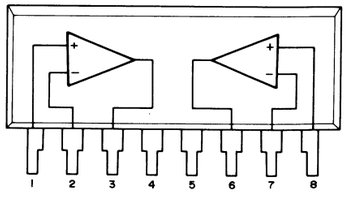


Figure 34-2 EQUIVALENT CIRCUIT OF IC

VHIIR3108//-1 (IC701)

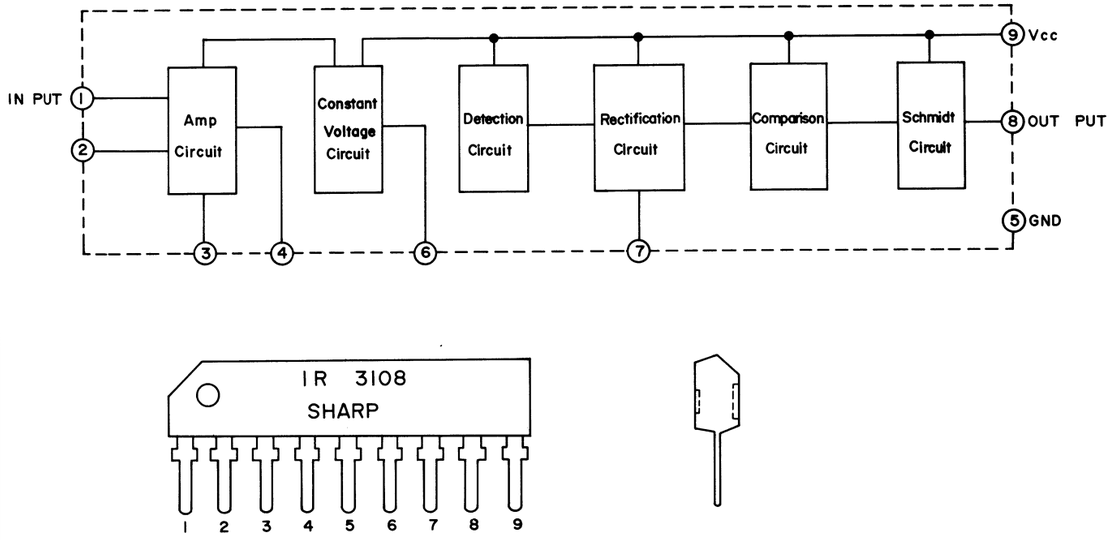


Figure 35-1 BLOCK DIAGRAM OF IC

VHILB1416//-1 (IC801, IC802)

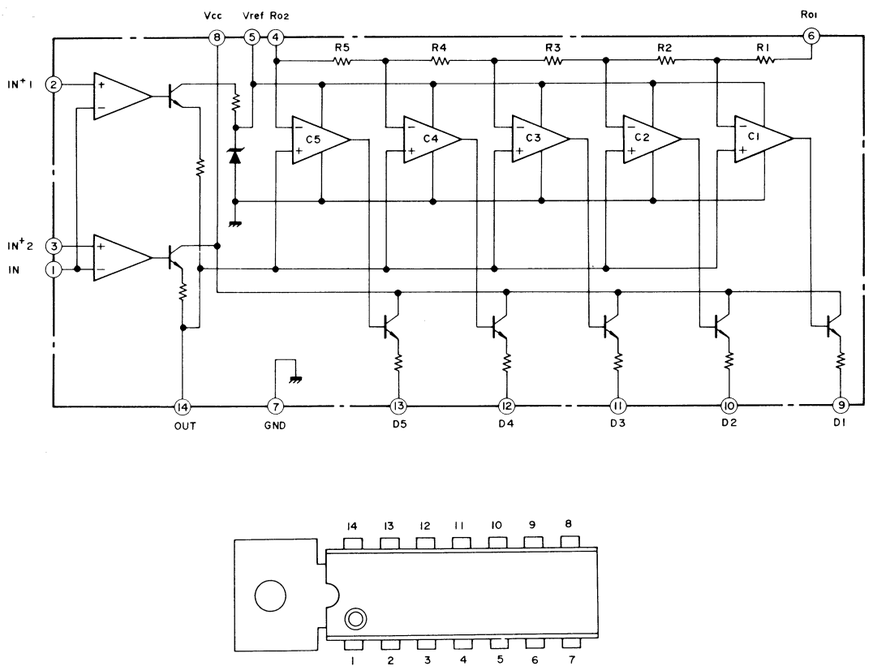


Figure 35-2 EQUIVALENT CIRCUIT OF IC

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION

NOTES: Be sure to use regular parts for securing the safety and reliability of the set. Parts marked with " ⚠ " and parts cross-hatched (in black) are especially important for maintaining the safety and protecting ability of the set. Be sure to replace them with parts of specified part number.

REF. NO.	PART NO.	DESCRIPTION	CODE
		IC (Integrated Circuit)	
IC101	VHIHA12413/-1	FM/AM IF Amp. (HA12413)	AL
IC102	VHIUPC1161C-1	FM MPX. (UPC1161C)	AL
IC201	VHISTK-437L-1	Power Amp. (STK-437L)	AX
IC202	VHITA78012P-1	Voltage Regulator (TA78012P)	AK
IC301, IC302	RH-IX1042AFZZ	Phono Equalizer Amp. (ML-120)	AQ
IC601, IC602	VHILM1011N/-1	Dolby NR (LM1011N)	AQ
IC603	VHIM51522L/-1	Playback Equalizer Amp. (M51522L)	AG
IC701	VHIIR3108//-1	APSS Signal Detector (IR3108)	AK
IC801, IC802	VHILB1416//-1	LED Driver for Level Meter (LB1416)	AK
		TRANSISTORS	
Q101	VS2SK55-E//-1	FM RF Amp. (2SK55E)	AE
Q102	VS2SC1923R/-1	FM Converter (2SC1923R)	AC
Q103	VS2SC394-Y/-1	FM Local Oscillator (2SC394Y)	AB
Q104	VS2SC394-Y/-1	FM IF Amp. (2SC394Y)	AB
Q105	VS2SC380-O/-1	AM RF Converter (2SC380O)	AB
Q106	VS2SC380-O/-1	AM Local Oscillator (2SC380O)	AB
Q107	VS2SC945AP/-1	AGC (2SC945AP)	AB
Q108	VS2SC945AP/-1	Inverter (2SC945AP)	AB
Q201, Q202	VS2SC945AP/-1	Audio Muting (2SC945AP)	AB
Q601, Q602	VS2SC945AP/-1	APSS Muting (2SC945AP)	AB
Q603, Q604	VS2SC945AP/-1	Record Equalizer Amp. (2SC945AP)	AB
Q605, Q606	VS2SC945AP/-1	Muting (2SC945AP)	AB
Q701	VS2SA1015Y/-1	APSS Switching (2SA1015Y)	AB
Q702	VS2SC2236Y/-1	Solenoid Driver (2SC2236Y)	AD
		DIODES	
D102, D103, D104	VHD1S1555V/1G	Protector, Reverse Current (1S1555V)	AB
D106	VHD1S1555V/1G	Protector, Reverse Current (1S1555V)	AB
D107	VHD1S1555V/1G	Level Shift (1S1555V)	AB
D108	VHD1S1555V/1G	Protector, Reverse Current (1S1555V)	AB
D109	VHD1S953///1F	Limiter (1S953)	
D110	VHD1S953///1F	Protector, Reverse Current (1S953)	
D201	VHDDBA40C15-1	Power Rectifier (DBA40C)	AH
D601, D602, D603	VHD1S1555V/1G	Protector, Reverse Current (1S1555V)	AB
D701	VHD10E1////-1	Solenoid, Back Electromotive (10E1)	AC
ZD101	VHEHZ6A3L//-1	Zener, Voltage Regulator (HZ6A3L)	AB
ZD201	VHECZ-122//-1	Zener, Voltage Regulator (CZ122)	AD
		LED (Light Emitting Diodes)	
LED201	VHPGL-9PR9/-1	Dial Pointer Illumination (GL-9PR9)	AC
LED801	RH-PX1018AFZZ	FM Stereo Indicator (GL-9PR6)	AC
LED802	RH-PX1018AFZZ	Recording Indicator (GL-9PR6)	AC
LED803	RH-PX1015AFZZ	Level Meter (GL-105M)	AK
LED804	RH-PX1015AFZZ	Level Meter (GL-105M)	AK
		THERMISTOR	
PTH201	RH-QX1003AFZZ	Thermal Protector	AF
		CONTROLS	
VR101	RVR-M0248AFZZ	10K ohm (B), V.C.O. Adjustment	AB
VR102	RVR-M0248AFZZ	10K ohm (B), Stereo Light Up Level Adjustment	AB
VR201, VR202, VR203, VR204, VR205, VR206	RVR-Z0091AFZZ	Volume Control Unit VR201: Record Level (Left) VR202: Record Level (Right) VR203: Balance VR204: Volume VR205: Treble VR206: Bass	
VR351, VR352	RVR-M0219AFZZ	2K ohm (B), 33/45 rpm Speed Adjustment	
VR601, VR602	RVR-M0256AFZZ	20K ohm (B), Playback Sensitivity Adjustment	AB
VR603, VR604	RVR-M0256AFZZ	20K ohm (B), Record Sensitivity Adjustment	AB
VR605, VR606	RVR-M0256AFZZ	20K ohm (B), Sensitivity Adjustment	AB
VR607, VR608	RVR-M0248AFZZ	10K ohm (B), Bias Sensitivity Adjustment	AB
VC101, VC102, VC103, VC104, VC105, TC101, TC102, TC103	RVC-R0074AFZZ	Variable Capacitor, Tuning with Trimmers TC101: FM Antenna Trimmer TC102: FM RF Trimmer TC103: FM Local Oscillator Trimmer	AR
TC104, TC105	RTO-H2050AFZZ	MW Antenna Trimmer/LW Antenna Trimmer	AD
TC106, TC107	RTO-H2050AFZZ	MW Local Oscillator Trimmer/ LW Local Oscillator Trimmer	AD

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
		TRANSFORMERS	
T101	RCILI0204AFZZ	FM IF	AC
T102	RCILI0273AFZZ	FM Quadrature Detector	AD
T103	RCILI0200AFZZ	AM 1st IFT and Ceramic Filter, 455 kHz (SG-270H·SG-270E for SCA)	AG
	RCILI0233AFZZ	AM 1st IFT and Ceramic Filter, 468 kHz (SG-270E for UK)	AG
T104	RCILI0267AFZZ	AM 2nd IFT	AC
⚠T401	RTRNP0695AFZZ	Power	AZ
		COILS	
L101	RCILA0407AFZZ	FM Antenna	AD
L102	RCILR0343AFZZ	FM RF	AD
L103	RCILB0434AFZZ	FM Local Oscillator	AD
L104	RCILC0003AGZZ	FM IF Trap	AB
L105	RCILA0470AFZZ	MW/LW Bar Antenna	AM
L106	RCILB0395AFZZ	MW Local Oscillator	AC
L107	RCILB0484AFZZ	LW Local Oscillator	AD
L108	VP-LK471K0000	Choke (470μH)	AB
L109	VP-LK101M0000	Choke (100μH)	AB
L110	VP-CH101K0000	Choke (100μH)	AB
L601, L602	RCILZ0075AFZZ	Record Equalizer (5.6mH)	AD
L603, L604	RCILB0480AFZZ	Bias Trap	AD
L605	RCILB0479AFZZ	Bias Oscillator Unit	AN
L606	RCILZ0089AFZZ	Choke (82μH)	AD
L607, L608	RCILZ0086AFZZ	Bias Trap (6.8mH)	AC
		LOW PASS FILTERS	
LPF601, LPF602	RCILL0066AFZZ	Dolby NR (15 kHz)	AH
M101, M102	RMPTA0104AFZZ	MPX Filter (38 kHz)	AD
		CERAMIC FILTER	
CF101, CF102	RFILF0071AFZZ	FM IF (Matched pair)	AD
		RESISTORS	

(Unless otherwise specified are 1/4W, ±5%, Carbon type)

R101	VRD-ST2EE104J	100K ohm
R102	VRD-ST2EE470J	47 ohm
R103	VRD-ST2EE330J	33 ohm
R104	VRD-ST2EE470J	47 ohm
R105	VRD-ST2EE123J	12K ohm
R106	VRD-ST2EE682J	6.8K ohm
R107	VRD-ST2EE102J	1K ohm
R108, R109, R110	VRD-ST2EE101J	100 ohm
R111	VRD-ST2EE103J	10K ohm
R112	VRD-ST2EE153J	15K ohm
R113	VRD-ST2EE102J	1K ohm
R114	VRD-ST2EE474J	470K ohm
R115	VRD-ST2EE121J	120 ohm
R116	VRD-ST2EE331J	330 ohm
R117	VRD-ST2EE100J	10 ohm
R118	VRD-ST2EE473J	47K ohm
R119	VRD-ST2EE333J	33K ohm
R120	VRD-ST2EE101J	100 ohm
R121	VRD-ST2EE472J	4.7K ohm
R122	VRD-ST2EE4R7J	4.7 ohm
R123	VRD-ST2EE821J	820 ohm
R124	VRD-ST2EE562J	5.6K ohm
R125	VRD-ST2EE154J	150K ohm
R126	VRD-ST2EE473J	47K ohm
R127	VRD-SU2EE472J	4.7K ohm
R128	VRD-ST2EE182J	1.8K ohm
R129	VRD-ST2EE100J	10 ohm
R130	VRD-ST2EE331J	330 ohm
R131	VRD-ST2EE103J	10K ohm
R132	VRD-ST2EE102J	1K ohm
R133	VRD-ST2EE222J	2.2K ohm
R134	VRD-ST2EE102J	1K ohm
R138	VRD-ST2EE333J	33K ohm
⚠R139	VRG-ST2EA330J	33 ohm, 1/4W, ±5%, Fusible
R140	VRD-ST2EE392J	3.9K ohm
R141	VRD-ST2EE123J	12K ohm
R142	VRD-ST2EE102J	1K ohm
R143	VRD-ST2EE103J	10K ohm
R144	VRD-ST2EE122J	1.2K ohm
R145, R146	VRD-ST2EE223J	22K ohm
R147, R148	VRD-ST2EE103J	10K ohm
R149, R150	VRD-ST2EE473J	47K ohm
R151, R152	VRD-ST2EE393J	39K ohm
R153, R154	VRD-ST2EE683J	68K ohm
R155	VRD-ST2EE823J	82K ohm
R156	VRD-ST2HD181J	180 ohm, 1/2W, ±5%, Carbon
R157	VRD-SU2EE561J	560 ohm
R158, R159	VRD-ST2EE101J	100 ohm
R160	VRD-ST2EE562J	5.6K ohm
R161, R162	VRD-ST2EE182J	1.8K ohm
R163	VRD-SU2EE562J	5.6K ohm
R201, R202	VRD-ST2EE682J	6.8K ohm
R203, R204	VRD-ST2EE103J	10K ohm
R205, R206	VRD-ST2EE123J	12K ohm
R207, R208	VRD-ST2EE102J	1K ohm
R209, R210	VRD-ST2EE124J	120K ohm
R211, R212	VRD-ST2EE224J	220K ohm
R213, R214	VRD-ST2EE122J	1.2K ohm
R215, R216	VRD-ST2EE121J	120 ohm
R217, R218	VRD-ST2EE123J	12K ohm
⚠R219, R220	VRD-ST2EA4R7J	4.7 ohm, 1/4W, ±5%, Fusible
R221, R222	VRD-ST2EE271J	270 ohm
R223, R224	VRD-ST2EE470J	47 ohm
R225, R226	VRD-ST2EE152J	1.5K ohm
R227, R228	VRD-ST2EE333J	33K ohm
R229, R230	VRD-ST2EE181J	180 ohm
R231	VRD-ST2EE123J	12K ohm
R232	VRD-ST2EE473J	47K ohm
R233	VRD-ST2EE123J	12K ohm
R234	VRD-ST2EE224J	220K ohm
⚠R235	VRG-ST2EA101J	100 ohm, 1/4W, ±5%, Fusible
⚠R236	VRG-ST3AA1R0J	1 ohm, 1W, ±5%, Fusible
R237, R238	VRD-ST2HD271J	270 ohm, 1/2W, ±5%, Carbon
R239	VRD-ST2EE152J	1.5K ohm
R240	VRS-PT3LB471K	470 ohm, 3W, ±10%, Oxide Film
R301, R302	VRD-ST2EE102J	1K ohm
R303, R304	VRD-ST2EE473J	47K ohm
R305, R306	VRD-ST2EE102J	1K ohm
R307, R308	VRD-ST2EE682J	6.8K ohm
R309, R310	VRD-ST2EE184J	180K ohm
R311, R312	VRD-ST2EE273J	27K ohm
R313, R314	VRD-ST2EE274J	270K ohm
R315	VRD-ST2EE561J	560 ohm
R317, R318	VRD-ST2EE102J	1K ohm
R351	VRD-SU2EE681J	680 ohm
R352	VRD-SU2EE152J	1.5K ohm
R601, R602	VRD-ST2EE103J	10K ohm
R603, R604	VRD-ST2EE101J	100 ohm
R605	VRD-ST2EE1R0J	1 ohm
R606	VRD-ST2EE222J	2.2K ohm
R607, R608	VRD-ST2EE682J	6.8K ohm
R609, R610	VRD-ST2EE560J	56 ohm
R611, R612	VRD-ST2EE273J	27K ohm
R613, R614	VRD-ST2EE154J	150K ohm
R615, R616	VRD-ST2EE562J	5.6K ohm
R617, R618	VRD-ST2EE682J	6.8K ohm
R619, R620	VRD-ST2EE223J	22K ohm
R621	VRD-ST2EE222J	2.2K ohm
R622	VRD-ST2EE124J	120K ohm
R623, R624	VRD-ST2EE392J	3.9K ohm
R625, R626	VRD-ST2EE392J	3.9K ohm
R627, R628	VRD-ST2EE123J	12K ohm
R629, R630	VRD-ST2EE222J	2.2K ohm
R631, R632	VRD-ST2EE181J	180 ohm
R633, R634	VRD-ST2EE332J	3.3K ohm
R635, R636	VRD-ST2EE473J	47K ohm
R637, R638, R639, R640	VRD-ST2EE274J	270K ohm
R641, R642	VRD-ST2EE564J	560K ohm
R643	VRS-PU3AB331K	330 ohm, 1W, ±10%, Oxide Film
R644	VRD-ST2EE821J	820 ohm
R647, R648	VRD-ST2EE393J	39K ohm
R649, R650	VRD-ST2EE224J	220K ohm
R651, R652, R653, R654	VRD-ST2EE682J	6.8K ohm
R655, R656	VRD-ST2EE103J	10K ohm
R657, R658	VRD-ST2EE821J	820 ohm
R659, R660	VRD-ST2EE182J	1.8K ohm
R661, R662	VRD-ST2EE104J	100K ohm
R663, R664	VRD-ST2EE330J	33 ohm
R665, R666	VRD-ST2EE122J	1.2K ohm
R669, R670	VRD-ST2EE123J	12K ohm
R671	VRD-ST2HD221J	220 ohm, 1/2W, ±5%, Carbon
⚠R672	VRG-ST2HA150J	15 ohm, 1/2W, ±5%, Fusible
R673	VRD-ST2EE152J	1.5K ohm
R675, R676	VRD-ST2EE222J	2.2K ohm
R677	VRD-ST2EE222J	2.2K ohm
R678	VRD-SU2EE182J	1.8K ohm
R701	VRD-ST2EE101J	100 ohm
R702	VRD-ST2EE273J	27K ohm
R703	VRD-ST2EE103J	10K ohm
R704	VRD-ST2EE102J	1K ohm
R705	VRD-ST2EE103J	10K ohm
R706	VRD-ST2EE222J	2.2K ohm
R707	VRD-ST2EE471J	470 ohm
R708	VRD-ST2EE333J	33K ohm
R709	VRD-ST2EE222J	2.2K ohm
R801, R802, R803, R804	VRD-ST2EE472J	4.7K ohm
R805, R806	VRD-ST2EE103J	10K ohm
R807, R808	VRD-ST2EE823J	82K ohm
R809, R810	VRD-ST2EE153J	15K ohm

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
R811, R812, R813, R814	VRD-ST2EE151J	150 ohm	

ELECTROLYTIC CAPACITORS

(Unless otherwise specified capacitors are 50V, ±20% type.)

C135	RC-EZA105AF1H	1MFD	AB
C143	RC-EZS107AF1C	100MFD, 16V, ±20%	AB
C145	VCEALA1HW335K	3.3MFD, 50V, ±10%	AB
C147	RC-EZA476AF1A	47MFD, 10V, ±20%	AB
C150	VCEALA1HW335K	3.3MFD, 50V, ±10%	AB
C151	RC-EZA475AF1E	4.7MFD, 25V, ±20%	AB
C152	RC-EZS227AF1C	220MFD, 16V, ±20%	
C154	VCEALA1HW155K	1.5MFD, 50V, ±10%	AB
C155	VCEALA1HW335K	3.3MFD, 50V, ±10%	AB
C156	VCEALA1HW224M	.22MFD	AB
C158	VCEALA1HW335K	3.3MFD, 50V, ±10%	AB
C159, C160	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C163, C164	VCEALA1HW105K	1MFD, 50V, ±10%	AB
C165, C168	RC-EZS227AF1A	220MFD, 10V, ±20%	AC
C169	RC-EZS337AF1C	330MFD, 16V, ±20%	AC
C170	RC-EZA105AF1H	1MFD	AB
C203, C204	RC-EZA105AF1H	1MFD	AB
C207	RC-EZS107AF1H	100MFD	AC
C208	RC-EZA335AF1H	3.3MFD	AB
C211, C212	RC-EZA336AF1C	33MFD, 16V, ±20%	AB
C213, C214	RC-EZS476AF1E	47MFD, 25V, ±20%	AB
C215, C216	RC-EZS476AF1E	47MFD, 25V, ±20%	AB
C217, C218	RC-EZS336AF1E	33MFD, 25V, ±20%	AB
C219, C220	RC-EZ1151AFZZ	1000MFD, 35V, ±20%	AF
C225, C226	VCEALA1HW334K	.33MFD, 50V, ±10%	AB
C227, C228	VCEALA1HW334K	.33MFD, 50V, ±10%	AB
C229, C230	VCEALA1HW335K	3.3MFD, 50V, ±10%	AB
C231	RC-EZA105AF1H	1MFD	AB
C232	RC-EZA335AF1H	3.3MFD	AB
C235	RC-EZ1153AFZZ	2200MFD	AL
C236	RC-EZ1152AFZZ	470MFD, 35V, ±20%	AE
C237, C238	RC-EZ1087AFZZ	1000MFD, 25V, ±20%	
C239	RC-EZS107AF1C	100MFD, 16V, ±20%	AB
C303, C304	VCEALA1HC475M	4.7MFD	
C307, C308, C313, C314	RC-EZA106AF1C	10MFD, 16V, ±20%	
C315	RC-EZS107AF1E	100MFD, 25V, ±20%	AB
C603, C604	VCEALA1HW475K	4.7MFD, 50V, ±10%	
C607, C608	RC-EZA476AF1A	47MFD, 10V, ±20%	AB
C613, C614	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C615	RC-EZS107AF1C	100MFD, 16V, ±20%	AB
C616	RC-EZS477AF1C	470MFD, 16V, ±20%	
C617, C618	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C619, C620, C621, C622	RC-EZA105AF1H	1MFD, 50V, ±20%	AB
C627, C628	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C629, C630	RC-EZS227AF1A	220MFD, 10V, ±20%	AB
C633	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C634	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	
C637	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C638	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	
C641, C642	VCEALA1HW334K	33MFD, 50V, ±10%	AB
C643, C644	VCEALA1HW104M	1MFD	AB
C645, C646	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C647, C648	VCEALA1HW474K	47MFD, 50V, ±10%	
C649, C650	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C659, C660	RC-EZA105AF1H	1MFD	AB
C661	RC-EZS107AF1E	100MFD, 25V, ±20%	AC
C662	VCEAAU1CW106Y	10MFD, 16V, +50 −10%	AB
C665, C666	RC-EZS227AF1C	220MFD, 16V, ±20%	AC
C667, C668	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C675	RC-EZS227AF1C	220MFD, 16V, ±20%	AB
C703, C705	RC-EZA106AF1C	10MFD, 16V, ±20%	AB
C706	RC-EZS107AF1C	100MFD, 16V, ±20%	AB
C707	RC-EZA476AF1A	47MFD, 10V, ±20%	AB
C708	RC-EZA335AF1H	3.3MFD	AB
C801, C802	RC-EZ1140AFZZ	.33MFD	AB
C803, C804	RC-EZ1106AFZZ	10MFD, 16V, ±20%	AE
C805, C806	RC-EZ1109AFZZ	4.7MFD, 25V, ±20%	AB
C807, C808	RC-EZ1108AFZZ	33MFD, 16V, ±20%	AB

CAPACITORS

(Unless otherwise specified capacitor are 50V, ±5%, Ceramic type.)

C101	VCCRPU1HH270J	27PF	AA
C102	VCCSPU1HL101J	100PF	AA
C103, C104, C105	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C106	VCCRPU1HH220J	22PF	
C107	VCCSPU1HL5R0C	5PF, 50V, ±.25PF, Ceramic	
C108	VCCSPU1HL221J	220PF	
C109, C110	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C111	VCCPRU1HH240J	24PF	
C112	VCCPPU1HH8R0D	8PF, 50V, ±5PF, Ceramic	
C113	VCCPPU1HH330J	33PF	
C114	VCCSPU1HH2R0C	2PF, 50V, ±.25PF, Ceramic	
C115	VCCPPU1HH8R0D	8PF, 50V, ±.5PF, Ceramic	
C116, C117, C118	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C119	VCKZPV1HF103Z	.01MFD, 50V, +80 −20%, Ceramic	AA
C121	VCCSPU1HL5R0C	5PF, 50V, ±.25PF, Ceramic	
C122	VCCSPU1HL560J	56PF	
C123	VCCSPU1HL100D	10PF, 50V, ±.5PF, Ceramic	
C124	VCKZPU1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	
C125	VCCCPU1HH120J	12PF	
C126	VCQSMA1HL331J	330PF, 50V, ±5%, Styrol	
C127	VCQSMA1HL181J	180PF, 50V, ±5%, Styrol	
C128	VCCCPU1HH220J	22PF	
C129	VCQSMA1HL221J	220PF, 50V, ±5%, Styrol	
C130	VCCCPU1HH390J	39PF	AB
C131	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C132	VCKZPU1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C133	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C134	VCTYPA1EX103M	.01MFD, 25V, ±20%, Semiconductor	
C136	VCTYAT1EX103K	.01MFD, 25V, ±10%, Semiconductor	
C137, C138, C139, C140, C141	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C142	VCKZPU1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C144	VCCSPU1HL101J	100PF	
C146	VCTYAT1CY223N	.022MFD, 16V, ±30%, Semiconductor	AA
C148	VCTYPA1EX103M	.01MFD, 25V, ±20%, Semiconductor	
C149	VCKZPV1HF103Z	.01MFD, 50V, +80 −20%, Ceramic	AA
C153	VCQSMU1HL471J	470PF, 50V, ±5%, Styrol	
C157	VCQYKA1HM473K	.047MFD, 50V, ±10%, Mylar	
C161, C162	VCKYAT1HB221K	220PF, 50V, ±10%, Ceramic	AA
C166, C167	VCKZPA1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C171	VCCCPU1HH150J	15PF	
C172	VCKZPU1HF223Z	.022MFD, 50V, +80 −20%, Ceramic	AA
C173	VCCSPU1HL471J	470PF	AB
C174	VCCCPU1HH100D	10PF, 50V, ±.5PF, Ceramic	
C205, C206	VCKYAT1HB181K	180PF, 50V, ±10%, Ceramic	
C221, C222	VCQYKA1HM473K	.047MFD, 50V, ±10%, Mylar	
C223, C224	VCTYPU1EX333J	.033MFD, 25V, ±5%, Semiconductor	
C233, C234	VCKZPU1MF333P	.033MFD, 75V, +100 −0%, Ceramic	
C240	VCKZPU1HF223Z	.022MFD, 50V, +80−20%, Ceramic	
C301, C302	VCCSAT1HL101J	100PF	
C305, C306	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	
C309, C310	VCKYAT1HV272K	.0027MFD, 50V, ±10%, Ceramic	
C311, C312	VCTYAT1EX822K	.0082MFD, 25V, ±10%, Semiconductor	
C351	VCKZPU1HL473Z	.047MFD, 50V, +80 −20%, Ceramic	
⚠C401	RC-KZC67CAFZZ	.01MFD, 400V, +100 −0%, Ceramic	
C501	VCKZPU1HF403Z	.04MFD, 50V, +80 −20%, Ceramic	
C601, C602	VCKYAT1HB331K	330PF, 50V, ±10%, Ceramic	
C605, C606	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	
C609, C610	VCQYKU1HM223J	.022MFD, 50V, ±5%, Mylar	
C611, C612	VCCSAT1HL101J	100PF	
C623, C624	VCTYPA1EX562J	.0056MFD, 25V, ±5%, Semiconductor	
C625, C626	VCKYAT1HB102K	.001MFD, 50V, ±10%, Ceramic	
C631, C632	VCQYKA1HM473K	.047MFD, 50V, ±10%, Mylar	
C635, C636	VCTYPA1EX472J	.0047MFD, 25V, ±5%, Semiconductor	
C639, C640	VCTYPA1EX273J	.027MFD, 25V, ±5%, Semiconductor	
C651, C652	VCTYPA1EX822J	.0082MFD, 25V, ±5%, Semiconductor	
C653, C654	VCTYPA1EX153J	.015MFD, 25V, ±5%, Semiconductor	
C655, C656	VCTYAT1HV222K	.0022MFD, 50V, ±10%, Semiconductor	
C657, C658	VCKYAT1HB681K	680PF, 50V, ±10%, Ceramic	
C663	VCQYKA1HM182J	.0018MFD, 50V, ±5%, Mylar	
C669, C670	VCKYAT1HB561K	560PF, 50V, ±10%, Ceramic	
C671, C672	VCKZPU1HF102P	.001MFD, 50V, +100 −0%, Ceramic	
C673, C674	VCCSPU1HL101J	100PF	
C701	VCTYAT1EX682K	.0068MFD, 25V, ±10%, Semiconductor	
C702	VCCSAT1HL101J	100PF	
C704	VCTYPA1EX333J	.033MFD, 25V, ±5%, Semiconductor	

MECHANICAL PARTS

1	JKNBR0139AFSA	Keys, Mechanical	AC
2	JKNBR0139AFSB	Key, Record	AD
3	LANGK0238AFFW	Bracket, Keys Retaining	AC
4	LANGT0929AFFW	Bracket, Motor	AD
5	LCHSM0340AFZZ	Main Chassis	
6	LCHSS0154AFFW	Sub Chassis	
7	LDAIH0055AFZZ	Head Plate	AC
8	LPLTP0054AFZZ	Plate, Thrust Adjustment	AB
9	LSLVM0091AFFW	Sleeve, Lock Release	
10	MLEVF1047AFFW	Lever, Lock	
11	MLEVF1048AFFW	Lever, Lock Release	

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
12	MLEVF1049AFFW	Lever, APSS Operation	
13	MLEVF1050AFFW	Lever, APSS	
14	MLEVF1051AFZZ	Lever, Sub Chassis Guide	
15	MLEVF1052AFFW	Lever, Record Prevent	AC
16	MLEVP0177AFZZ	Lever, Playback	AC
17	MLEVP0178AFZZ	Lever, Fast-forward/Forward APSS	AC
18	MLEVP0179AFZZ	Lever, Rewind/Reverse APSS	AB
19	MLEVP0180AFZZ	Lever, Stop/Eject	AC
20	MLEVP0181AFZZ	Lever, Record	AB
21	MLEVP0182AFZZ	Lever, Pause	AA
22	MLEVP0183AFZZ	Lever, Latch	AB
23	MLEVP0184AFZZ	Lever, Erase Proof	AB
24	MLEVP0186AFZZ	Lever, Eject	AC
25	MLEVP0193AFZZ	Lever, Full Auto Stop	AB
26	MLEVP0194AFZZ	Lever, Full Auto Stop Sensor	AA
27	MSPRC0209AFFJ	Spring, Head Azimuth	
28	MSPRC0213AFFJ	Spring, Solenoid	AA
29	MSPRD0264AFFJ	Spring, Latch Plate	
30	MSPRD0273AFFJ	Spring, Record Prevent Lever	AA
31	MSPRP0236AFFW	Spring, Sub Chassis Retaining	AA
32	MSPRT0643AFFJ	Spring, Erase Proof Lever	AA
33	MSPRT0644AFFJ	Spring, Pause Lever/Lock Lever	AA
34	MSPRT0645AFFJ	Spring, Playback Lever/ Fast-forward Forward APSS Lever	AB
35	MSPRT0654AFFJ	Spring, Eject Lever/Record Lever	AA
36	MSPRT0659AFFJ	Spring, Stop Lever	
37	MSPRT0663AFFJ	Spring, Full Auto Stop Sensor	
38	MSPRT0664AFFJ	Spring, Full Auto Stop	
39	MSPRT0665AFFJ	Spring, APSS Lever	
40	MSPRT0683AFFJ	Spring, APSS Operation Lever	
41	MSPRT0715AFFJ	Spring, Rewind/Reverse APSS Lever	
42	MSPRT0716AFFJ	Spring, Sub Chassis	
43	MSPRT0717AFFJ	Spring, Pressure Roller	AC
44	NBLTK0158AFZZ	Belt, Motor	AC
45	NDAIR0142AFSA	Reel, Supply	AF
46	NDAIR0145AFSA	Reel, Take-up	AK
47	NFLYC0085AFZZ	Flywheel	AB
48	NGERH0061AFZZ	Gear, Full Auto Stop	AH
49	NIDR-0070AFZZ	Play Idler	AE
50	NPLYR0071AFZZ	Pulley, Full Auto Stop	
51	NROLV0013AFZZ	Roller, Fast-forward/Rewind	AH
52	NROLV0014AFZZ	Gear, Fast-forward	AB
53	NROLY0034AFZZ	Pressure Roller	AE
54	NSFTT0141AFFD	Shaft, Keys	AC
55	PGIDM0080AFZZ	Bracket, Lever Retaining	AC
56	RHEDA0077AFZZ	Erase Head	AM
57	RHEDH0075AFZZ	Record/Playback Head	AP
59	MSPRT0722AFFJ	Spring, Play Idler	

PLAYER PARTS

101	CDAI-1007AF01	Tonearm Base Assembly	
101-1	LHLDZ9060AFSA	Holder, Rest Stand	AB
101-2	MLIFP0007AFSA	Tonearm Lifter	AC
101-3	GDAI-1007AFSA	Tonearm Base	
●101-4	MSPRC0215AFFJ	Spring, Tonearm Liter	AA
102	JKNBN0456AFSA	Knob, Speed Selector	AC
103	JPU-P0052AFSA	Tonearm Assembly	BB
	91ZCART-117	Cartridge	BA
	91ZHARICOV117	Cover, Stylus	AC
	91ZSTY-117	Stylus	AX

REF. NO.	PART NO.	DESCRIPTION	CODE
104	MARMM0062AFFW	Bracket, Tonearm	AD
105	MLEVF0843AFZZ	Lever, Cue Click	AC
106	MLEVP0119AFSB	Lever, Cue-up	AD
107	PCUSG0116AF00	Cushion, Player	AC
109	91Z702279	Shaft, Turntable	AN
110	91Z894901	Clutch Plate	AE
111	91Z894902	Guide, Clutch Plate	AE
112	91Z895248	Gear, Tonearm Return	AN
113	91Z700514-1	Bearing, Turntable	AH
114	91Z871641-4	Sub Chassis Assembly	AV
115	91Z895073	Pin, Eccentric	AC
116	91Z895251	Spring	AC
117	91Z894687	Lever, Operation	AN
118	91Z870933-1	Arm, Operation	AH
119	91Z870932-1	Guide, Operation Arm	AE
120	91ZE-271110	Stopper, Turntable Shaft	AE

MISCELLANEOUS

REF. NO.	PART NO.	DESCRIPTION	CODE
	CSPRT0003AG19	Dial Cord Assembly	
201	GCABA1544AFSA	Cabinet, Top (SG-270H)	
	GCABA1546AFSA	Cabinet, Top (SG-270E)	
202	GCABB1530AFSA	Cabinet, Bottom	AX
203	GCOVA1124AFSA	Cover, APSS Indicator Lamp	AD
	GCOVA1195AFSA	Dust Cover	AZ
204	GFTAC1123AFSA	Door, Cassette Compartment	AL
205	GFTAF1010AFSA	Door, Controls	AH
	GLEGG0053AF00	Leg	AC
206	GMADD0070AFSA	Indication Plate, Dial	AE
207	HDECB0018AGSA	Mirror, Cassette Compartment	AA
208	HSSND0266AFSA	Dial Pointer	AD
209	JKNBK0202AFSA	Knob, Record Level/Treble/ Balance/Volume/Bass	AB
210	JKNBN0455AFSA	Knob, Function Selector	AB
211	JKNBP0105AFSA	Knob, Power Switch	AB
212	JKNBP0106AFSA	Knob, Dolby NR/Metal Tape Switch	AB
213	JKNBZ0185AFSA	Knob, Tuning Control	AD
214	KCOUB0094AFZZ	Tape Counter	AK
	LANGF0557AFSA	Bracket, Strengthen Control Door	AD
	LANGF0578AFZZ	Bracket, LED P.W.B. Retaining	
	LANGT0943AFZZ	Bracket, Phono Motor	
215	LANGZ0078AFZZ	Bracket, Dial	AF
	LBSHC0004AGZZ	Bushing, AC Supply Cord (SEEG. SCA)	
⚠216	LBSHC0002AGZZ	Bushing, AC Supply Cord (SUK)	AB
	LBSHC0053AFZZ	Bushing, AC Supply Cord (General)	
	LBSHS0001AG00	Cushion, Phono Motor	AA
	LHLDF1238AFZZ	Holder, LED P.W.B.	AC
	LX-BZ0293AFFD	Screw, Phono Motor	
217	LX-HZ0056AFFD	Screw, Mechanism Retaining	AA
	LX-HZ0076AFZZ	Screw, Player Retaining	AA
218	MHNG-0112AFZZ	Hinge	AC
219	MLEVF1044AFZZ	Lever, Power Switch	AD
220	MLEVF1063AFZZ	Lever, Dolby NR/Metal Switch	AA
	MLEVP0190AFZZ	Lever, Record Interlocking	AC
	MSPRD0286AFFJ	Spring, Speed Selector Shaft	
	MSPRP0129AFFW	Spring, Cassette Retaining	AB
221	MSPRT0672AFFJ	Spring, Record/Playback Switch	AC
	MSPRT0673AFFJ	Spring, Cassette Door Up	AB
	NBLTH0072AF00	Belt, Turntable	AG

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
222	NBLTK0159AFZZ	Belt, Tape Counter	AB
	PCUSG0107AF00	Cushion, Record Spring	AA
223	NDRM-0157AFZZ	Drum	AD
224	NPLYD0052AFZZ	Pulley, Dial Cord (Small)	AB
225	NPLYD0056AFZZ	Pulley, Dial Cord (Large)	AB
	NSFTT0143AFZZ	Shaft, Speed Selector Switch	AH
226	NTNT-0052AFSA	Turntable Platter	AU
	PCOVM1058AFSA	Cover, Phono Motor Bracket	AD
227	PCOVP1169AFZZ	Cover, C401	
	PCOVU1111AFZZ	Cover, APSS Indication Shading	AA
	PCUSG0121AF00	Cushion, Record Lever	AA
	PCUSU0245AFZZ	Cushion, Mechanism Keys	AA
228	PEPAP0001SGSA	Spindle Adaptor for 45 rpm Records	AC
	PGUMS0103AF00	Cushion, Control Door	AA
229	PRDAF0050AFFW	Heat Sink, D201	
230	PRDAR0225AF00	Heat Sink, Bottom	AW
231	PRDAR0226AF00	Heat Sink, Top	AR
232	PSHEP0068AF00	Turntable Mat	AN
233	PSLDC3101AFZZ	Shield Plate, IC602	AA
234	PSLDM3176AFZZ	Shield Plate, Local Oscillation Circuit	AB
	PSLDM7128AFZZ	Shield Plate, Main P.W.B.	AE
	PSTPK0005AGZZ	Stopper, MW/LW Bar Antenna Coil	
	QACCL0051AFZZ	AC Supply Cord (SCA)	AP
	QACCV0001AGZZ	AC Supply Cord (SEEG)	AL
⚠235	QACCZ0002TA0F	AC Supply Cord	AG
	QACCZ0053AF00	AC Supply Cord (General)	AK
	QACCB0052AF09	AC Supply Cord (SUK)	
236	JKNBN0456AFSA	Knob, Speed Selector	AC
237	PSLDM3188AFZZ	Shield Plate, Variable Capacitor	AC
238	LANGF0582AFZZ	Bracket, Headphones Jack	
	QANTW0058AFZZ	FM Dipole Aerial	AK
CNP1	QCNCM174EAFZZ	Plug, 5 Pin	AB
CNP2	QCNCM177HAFZZ	Plug, 8 Pin	AC
CNP3	QCNCM175FAFZZ	Plug, 6 Pin	AC
CNP4	QCNCM176GAFZZ	Plug, 7 Pin	AC
CNP5	QCNCM051CAFZZ	Plug, 3 Pin	AC
CNS1	QCNCW145EAFZZ	Socket, 5 Pin	AB
CNS2	QCNW-0741AFZZ	Socket, 8 Pin	AK
CNS3	QCNW-0742AFZZ	Socket, 6 Pin	AE
CNS4	QCNW147GAFZZ	Socket, 7 Pin	AB
CNS5	QCNCW051CAFZZ	Socket, 3 Pin	AC
F401	QFS-C162CAGNI	Fuse, T 1.6A	AE
⚠F402	QFS-C322CAGNI	Fuse, T 3.15A	AE
F403	QFS-C102CAGNI	Fuse, T 1A	AE
	QFSHD2051AFZZ	Fuse Holder	AA

REF. NO.	PART NO.	DESCRIPTION	CODE
J201	QJAKJ0079AFZZ	Jack, Headphones	AG
J601, J602	QJAKE0059AFZZ	Jacks, Microphone	AC
TM1	QSOCD2259AFZZ	Socket, FM External Aerial	AD
⚠SO2	QSOCE0558AFZZ	Socket, Mains Voltage Selector	AG
SO3, SO4	QSOCD2282AFZZ	Socket, Speaker Output	AD
SW1 (A ~ J)	QSW-S0280AFZZ	Switch, Function Selector	AQ
SW2 (A ~ N)	QSW-S0283AFZZ	Switch, Record/Playback	AK
SW3 (A ~ F)	QSW-S0282AFZZ	Switch, Metal Tape	AE
SW4	QSW-S0281AFZZ	Switch, Dolby NR	AF
SW5	QSW-F0137AFZZ	Switch, Tape Motor	AE
SW6	QSW-F0140AFZZ	Switch, APSS	AE
⚠SW7	QSW-P9115AFZZ	Switch, Power	AK
SW8 (A, B)	QSW-S0191AFZZ	Switch, Beat Canceller	AD
SW9	91Z891340	Switch, Phono Motor	
SW10	————	With in M2	
M1	RMOTV0084AFZZ	Tape Motor	AV
M2	RMOTV0086AFZZ	Phono Motor Assembly (with motor P.W.B.)	AY
	SPAKX0335AFZZ	Packing Add	
PL801	RLMPM0110AFZZ	Lamp, APSS Indicator	AD
SOL1	RPLU-0108AFZZ	Solenoid	AH
	SPAKA0636AFZZ	Packing Add.	AK
	SPAKA0640AFZZ	Packing Add.	AK
	SPAKC1499AFZZ	Packing Case (SG-270H)	AQ
	SPAKC1500AFZZ	Packing Case (SG-270E)	
	SPAKP0135AFZZ	Wrapping Paper	AG
	SPAKX0282AFZZ	Packing Add.	AD
	SPAKX0309AFZZ	Packing Add.	AB
	SPAKX0314AFZZ	Packing Add.	AA
	SPAKX0318AFZZ	Packing Add.	AA
	SSAKA0007SEZZ	Polyethylene Bag	AA
	SSAKA0101AFZZ	Packing Material (SG-270H)	AA

P.W.B. ASSEMBLY (not replacement item)

DUNTA0102AF01	Power Supply Circuit	BS
DUNTL0118AF03 (Combined Assembly)	Main Circuit, Jack Circuit	BZ
DUNTZ0394AF02	LED Circuit	AX

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